

BRASWELL ENGINEERING, INC.

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October 23, 2000

Comments and Additional Information

On

Appeal Resolution for
Congaree River in Richland
and Lexington Counties, S.C.



Introduction:

The appeal resolution documents for the Richland and Lexington Counties Flood Insurance Studies were prepared and submitted by FEMA to the communities in response to appeals received by FEMA on the revised flood studies. The documents and subsequent meetings were initiated by FEMA in an effort to resolve any questions, discrepancies or appeals concerning the FIS.

As a part of the appeal process, Braswell Engineering, Inc. prepared a report entitled "Proposed Revision to The Congaree River Floodway at Cross Section 226700, dated November 30, 1999. The report dealt with the "n" value discrepancy found between the actual site conditions and the modeled values and their impact on the resultant flood elevations and floodway configuration.

Additional information is being presented in this report to further support the original appeal data as well as provide the impact of the "n" value change to the resolution floodway model presented by FEMA on October 18, 2000.

Additional Data:

At the request of FEMA representatives and in support of the original appeal request, photographs were made of the Congaree River floodplain conditions within the right overbank area of Cross Section "A" (226700) in Lexington County. The photographs, along with their descriptions and a map showing their location, are contained within the appendix of this report. The photographs clearly support the previous assumption, that the "n" value of 0.03 used in the NH data between GR stations 25101 and 30259.4 was not representative of the existing composite floodplain conditions and that a weighted average value of 0.09 would provide an accurate portrayal of the site. The higher "n" value would also be more consistent with the overbank values used to model upstream and downstream cross sections.

The HEC-2 floodway data for the Congaree River provided and dated October 18, 2000 was revised using the 0.09 value on the NH line between Stations 25101 and 30259.4 at Cross Section 226700. The revised model resulted in a narrower floodway at C.S. 226700 with only a slight increase in the 100-year and floodway elevations above the current (10/18/00) FEMA model. The increase in elevations averaged from 0.1 feet to 0.0 feet from the site upstream to the end of the study reach. The allowable increase in the 100-year elevation due to the floodway encroachment was well below the FEMA and South Carolina maximum of 1.00 foot. An additional change to the model was made which involved revising the encroachment limit on the ET line at C.S. 226700 from 5.41 to 7.41. This change resulted in an efficient floodway while maintaining floodway elevation increases below the 1.00 foot maximum throughout the study reach. This revised floodway model resulted in no significant changes in floodway widths upstream or downstream of C.S. 226700. The average floodway velocities at the section were just over 2 fps with lower velocities out in the overbank areas. With these low velocities, the slight bend in the floodway configuration would have little or no impact on the system. The proposed floodway configuration is shown on the following copy of a portion of the FEMA map.

158

Creek

CONGAREE RIVER

FLOODWAY (PER REVISED RESOLUTION MODEL)

1995 FLOODWAY

1999 PRELIMINARY FLOODWAY

CLIENT PROPERTY

ONE AE

C.S. 226700

4
X-SEC
226700

Old fire Rd

Toms Branch

ZONE E

SX TRANSPORTATION

CONGAREE RIVER
COUNTY BOUNDARY

MAP effective date shown on this map to
to structures in the zones where eleva-

available in this community. Contact your
Flood Insurance Program at (800) 638-0620.



GRAPHIC SCALE
0 1000 FEET

FLOODWAY

GP 51A
21390

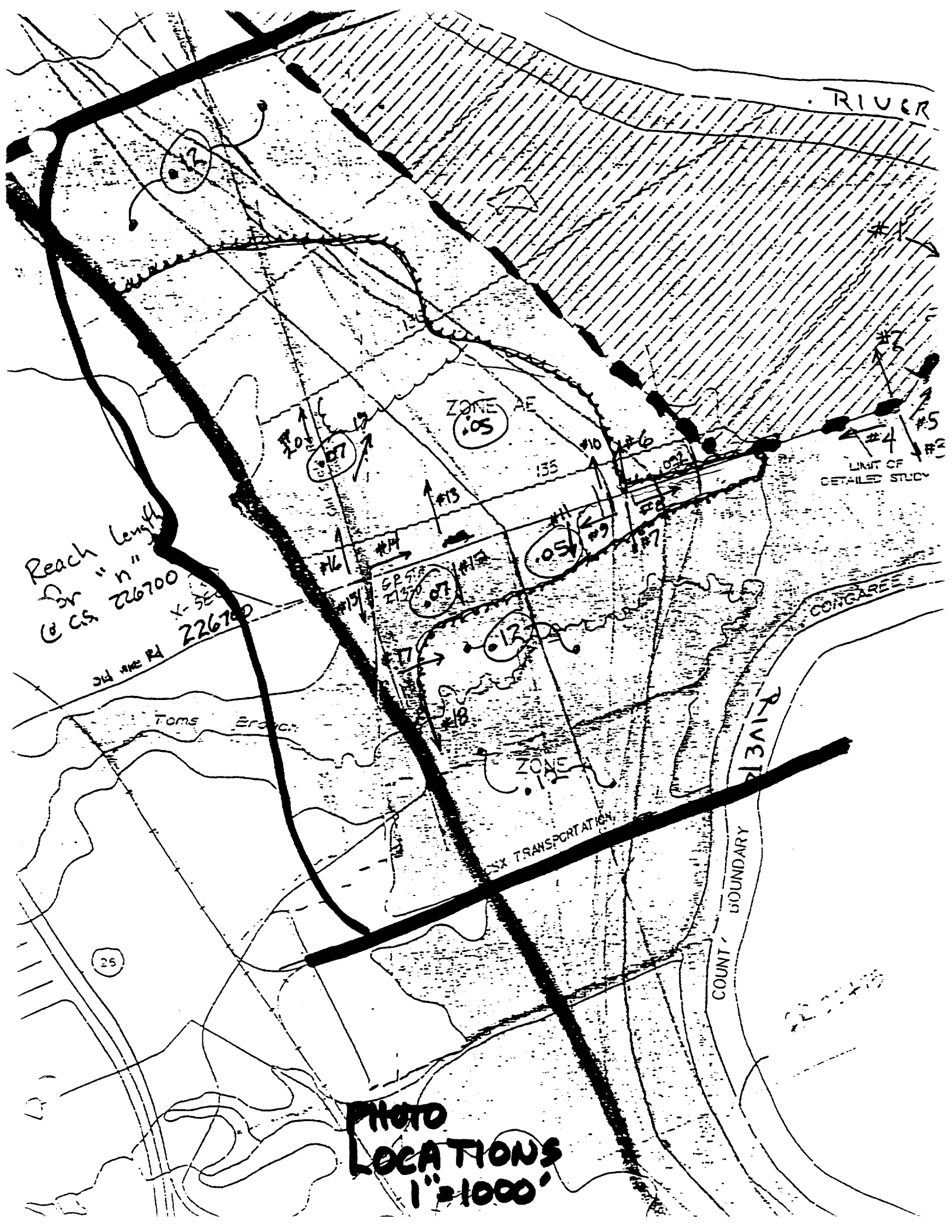
Conclusion:

Revising the "n" value at Cross Section "A" would not only provide a more accurate representation of existing conditions but also provide a value more consistent with the adjoining modeled cross sections. By revising the "n" value and fine tuning the encroachment limits, an efficient and viable floodway consistent with FEMA and South Carolina requirements would result.

APPENDIX

PHOTOGRAPH LOG

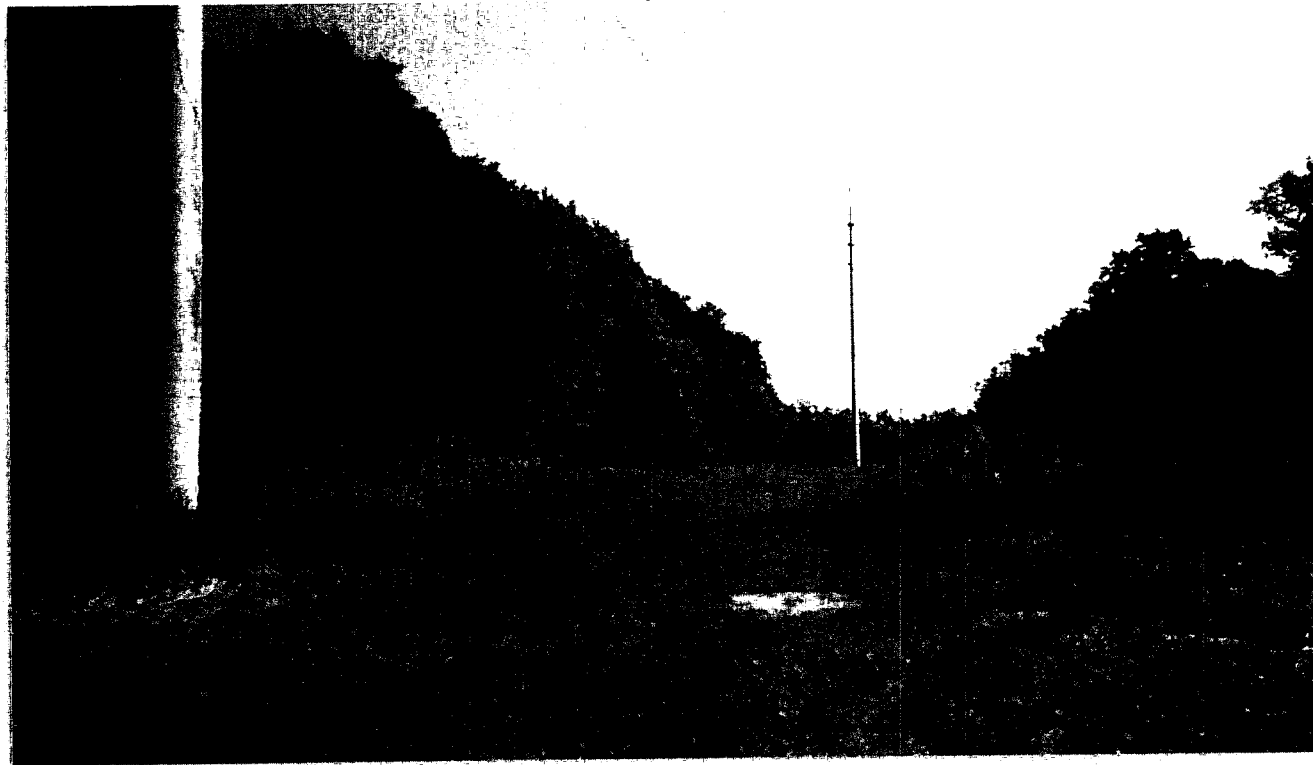
- #1 - Approx. 500' from river bank along power line
- #2 - Upstream floodplain at bend in C.S.
- #3 - Downstream floodplain at bend
- #4 - looking up old wire road away from river
- #5 - looking down old wire road toward river
- #6 - .5 miles along old wire road from bend in C.S., u.s. floodplain
- #7 - downstream floodplain
- #8 - looking toward river
- #9 - looking toward old State Road
- #10 - 100' from #6, upstream floodplain at edge of 10' pines
- #11 - 3200' from bend in C.S., d.s floodplain
- #12 - D.S. floodplain 1100' from #11
- #13 - U.S. floodplain
- #14 - back toward river from Old Wire Rd and Old State Rd.
- #15 - D.S. on Old State Rd.
- #16 - U.S. Old State Rd.
- #17 - 0.2 Miles D.S. on Old State Road from Old Wire, toward river
- #18 - D.S. along Old State Rd.
- #19 - 0.2 Miles U.S. on old Sate from Old Wire Rd., floodplain toward river
- #20 - U.S. along Old State Rd.



#2 - Up stream floodplain at bend in C.S.



#1 - Approx. 500' from river bank along power line





#3 - Downstream floodplain at bend

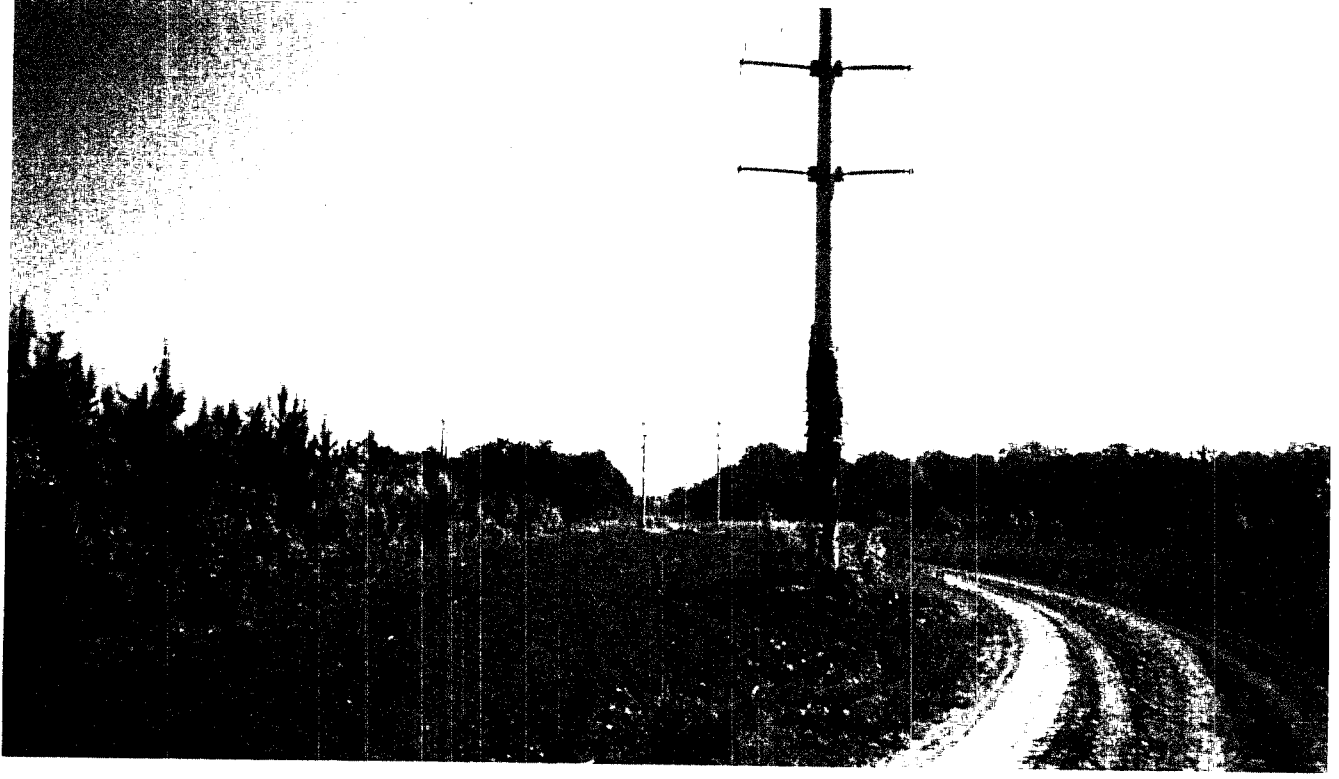


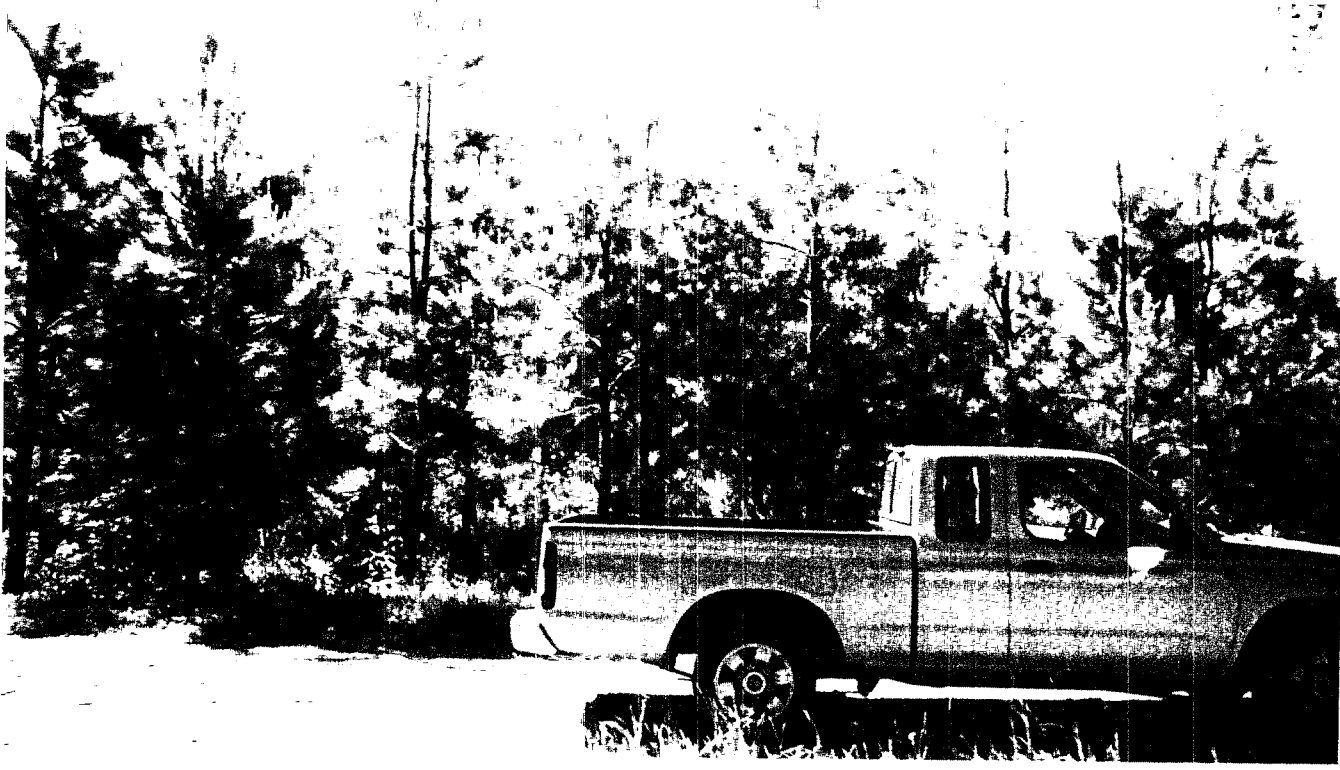
#4 - looking up old wire road away from river

#6 - .5 miles along old wire road from bend in C.S., u.s.
floodplain



#5 - looking down old wire road toward river



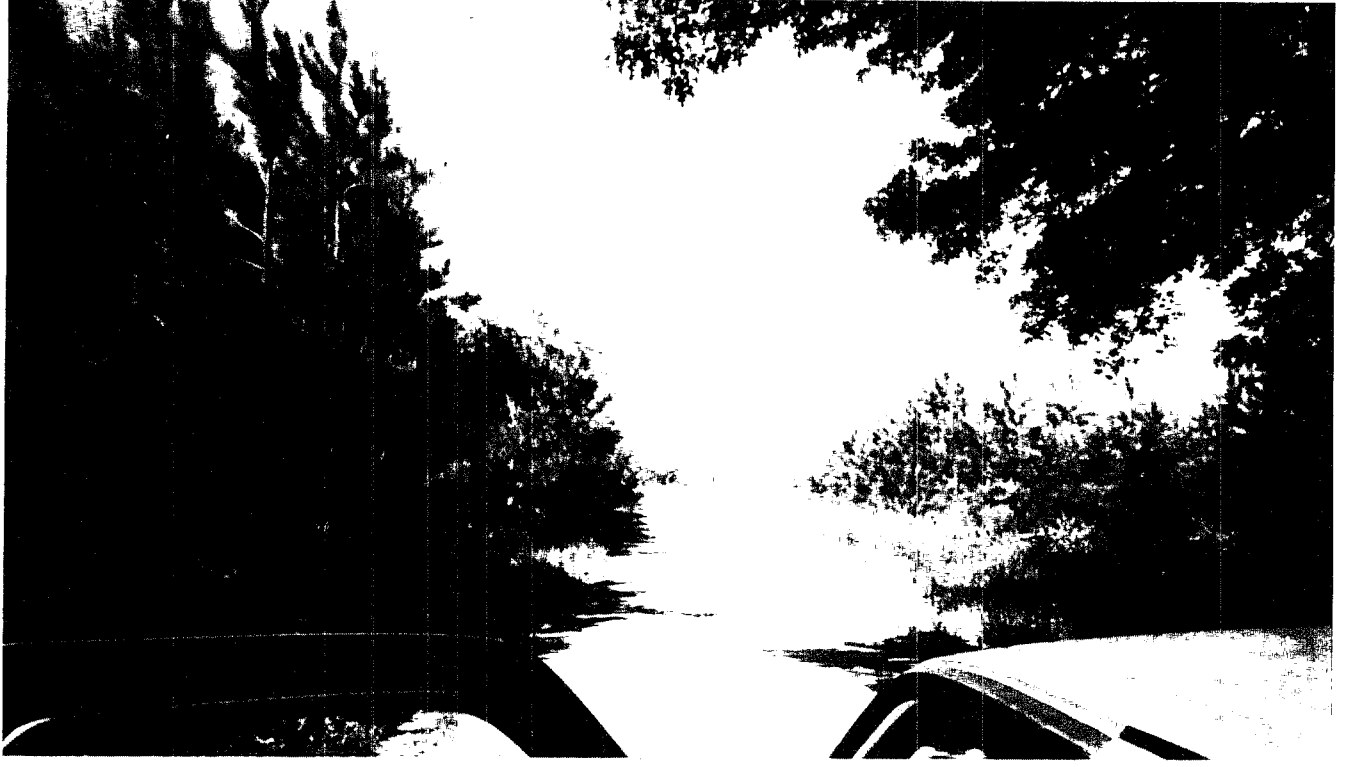


#7 - downstream floodplain



#8 - looking toward river

#9 - looking toward old State Road



#10 - 100' from #6, upstream floodplain at edge of 10' pines





#14 - back toward river from Old Wire Rd and Old State Rd.



#13 - U.S. floodplain





#15 - D.S. on Old State Rd.



#16 - U.S. Old State Rd.

#17 - 0.2 Miles D.S. on Old State Road from Old Wire,
toward river



#18 - D.S. along Old State Rd.





#20 - U.S. along Old State Rd.



#19 - 0.2 Miles U.S. on old State from Old Wire Rd.,
floodplain toward river

**FLOODWAY HEC-2
(REVISED RESOLUTION MODEL)**

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*****
* HEC-2 WATER SURFACE PROFILES *
*                               *
* Version  4.6.2; May 1991    *
*                               *
*  UN DATE  20OCT00  TIME  07:04:53 *
*                               *
*****

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*****
* U.S. ARMY CORPS OF ENGINEERS *
* HYDROLOGIC ENGINEERING CENTER *
* 609 SECOND STREET, SUITE D    *
* DAVIS, CALIFORNIA 95616-4687 *
* (916) 756-1104               *
*****

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X   X   XXXXXX   XXXXX   XXXXX
X   X   X       X       X
X   X   X       X       X
XXXXXX XXXX   X       X
X   X   X       X       X
X   X   X       X       X
X   X   XXXXXX   XXXXX   XXXXX

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THIS RUN EXECUTED 200CT00 07:04:53

HEC-2 WATER SURFACE PROFILESVersion 4.6.2; May 1991

T1 Richland and Lexington County, SC FISS
 T2 Stream Name: Congaree River floodway model 10-18-00
 T3 100-year flood Q gage= 292000 cfs
 T4 Calibration mode finalhgh.01 and finallow.dat
 T5 Calibrated to 1976 flood highwater marks
 T6 Also calibrated to Columbia USGS gage data
 T7 Ineffective areas based on RMA-2V model July 21, 2000

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSBL	FQ
		2			.00062				133.50	
J2	NPROF	IPLDT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACK
	1	0	-1							

J3 VARIABLE CODES FOR SUMMARY PRINTOUT

150 110 200 115

J5 LPRNT NUMSRC *****REQUESTED SECTION NUMBERS*****
 -10 -10

NH 4. 1.0 12000 0.12 22200. 0.065 22750 0.120 24475.
 REVISED NH TO REFLECT EFFECTIVE FLOW AREA IN LEFT OVBANK
 12 364000 262000 278300 318200 310000 236300 145300 159000 138000
 219600 258600 364700
 QT 5 298400 298400 298400 298400 298400
 5. 184600. 282400. 323700. 323700. 441800.
 set-1 8-11-99 eq.c set-1 set-1 8-11 8-11
 BT 7.11 9.11 9.41 9.025 23700 17475 23700.
 NH 10.0 4900 10.0 6400 .12 22200 .038 22750 .12
 NE 24475
 X1 212950 45 22200. 22750. 0. 0. 0.
 GR 145. -775. 140. -600. 130. -550. 120. -500. 110. -400.
 GR 108. -200. 110. 1 113. 400. 118. 1400. 114. 2400.
 GR 110. 3300. 110. 3500. 120. 3700. 122. 4900. 120. 6400.
 GR 119.9 9475 119 12400 120 17175 120. 17475 120. 19700.
 GR 110. 22000. 110. 22200. 107.6 22210. 106.5 22250. 106.6 22290.
 GR 105.5 22330. 104.7 22370. 103.8 22410. 102.6 22450. 100.7 22490.
 GR 99.9 22530. 98.6 22570. 94.8 22610. 96.9 22650. 92.3 22690.
 GR 107.6 22730. 110. 22750. 120. 22765. 120. 23295. 119. 23475.
 GR 120. 23675. 130. 23775. 140. 23975. 150. 24175. 155. 24475.

NH 4. 1.0 12000 0.12 22200. 0.065 22750 0.120 23750.
REVISED NH TO REFLECT EFFECTIVE FLOW AREA IN LEFT OVBANK

BT			7.11		9.11	3.41	8025	23499	15475	23499
NH	4	10.0	7600	.12	22200	.038	22750	.12	23750	
X1	215700	30	22200.	22750.	2750.	2750.	2750.			
GR	150.	1	140.	100.	130.	200.	120.	250.	115.	300.
GR	120.	1700.	120	7600	120	8775	120	15475	120.	20100.
GR	110.	22200.	107.6	22210.	106.5	22250.	106.6	22290.	105.5	22330.
GR	104.7	22370.	103.8	22410.	102.6	22450.	100.7	22490.	99.9	22530.
GR	98.6	22570.	94.8	22610.	96.9	22650.	92.3	22690.	107.6	22730.
GR	110.	22750.	120.	23200.	130.	23400.	140.	23600.	150.	23750.

NC				.3		.5				
ET	0.	0.	7.11	0.	9.11	7.41	10085	26000	17000	26000
NH9.	0.18	12025.	0.12	16095	0.035	19085.	0.12	19665.	0.038	
NH20334.	0.12	20700.	0.035	22000.	0.092	25101.	0.035	30259.4	0.	
REVISED NH TO REFLECT EFFECTIVE FLOW AREA IN LEFT OVBANK										
NH	11	10.0	8100	.12	8900	.12	17585	.12	19085	.035
NH	19100	.12	19665.	.038	20334.	.12	20700.	.03	22000.	.092
NH	25101.	.090	30259.4							

```

=====
===== HEC-2 Input file created with CodeH2 =====
===== Version: 3.98 =====
===== CodeH2 Copyrighted 1986 - 1991 =====
===== Run Date: Tuesday January 20, 1998 =====
===== Run Time: 15:28:29 =====
=====

```

=====

The Following Options Have Been Activated :

1. FLOODWAY Option.
 2. HSMM_FW_OUTPUT Option.
- =====

Cross Section 1.0
Cross Section A (HSMM Draft)

X1	226700	87.	19665.	20334.	3800.	7000.	11000.		0.	
GR	145.	5225.	140.	5243.	135.	5260.	130.	5285.	125.	5340.
GR	125.	5660.	130.	5665.	135.	5675.	135.	5690.	130.	5705.
GR	125.	5725.	125	8100	125	8900	125.	12025.	130.	12125.
GR	133.	12325.	130.	12525.	125.	12585.	125.	16985.	130.	16995.
GR	130.	17025.	125.	17035.	121.	17225.	120.	17325.	120.	17505.
GR	125.	17535.	130.	17545.	135.	17555.	135.	17585.	130.	17600.
GR	128.	17765.	125.	18365.	125.	19085.	130.	19095.	135.	19100.
GR	135.	19115.	130.	19145.	125.	19195.	123.	19290.	125.	19375.
GR	125.7	19665.	105.7	19700.	96.3	19755.	96.4	19815.	95.6	19895.
GR	102.	19915.	103.89	20000.	106.	20095.	111.	20265.	110.	20295.3
GR	112.	20312.2	114.	20328.9	114.57	20334.	116.	20346.7	118.	20368.9
GR	120.	20394.9	122.	20428.8	124.	20495.6	124.	20584.8	123.44	20700.
GR	122.	20998.3	120.	21456.6	120.	21908.6	120.	22000.	120.	22276.
GR	120.	22565.4	122.	22806.7	122.	23017.1	120.	23214.8	120.	23922.6

GR	122.	24112.3	122.	24166.9	122.	24293.8	122.	24364.3	122.	25101.
GR	122.	25148.2	124.	25236.	126.	25489.5	128.	26060.2	128.	26737.6
GR	128.	26786.1	130.	26898.9	132.	27573.9	134.	28081.8	136.	28411.2
GR	140.	29059.4	144.	30259.4						

set-2 set-2 8/99 8/99

ET	0.	0.	7.11	0.	9.11	7.11	5550	22656	15014	22650
NH4.	0.18	10875.	.12	19585.	0.038	20415.	.12	28604.8	0.	
REVISED NH TO REFLECT EFFECTIVE FLOW AREA IN LEFT OVERBANK										
NH	11	10	3450	.175	6175	.175	6175	.175	13400	.12
NH	15014	.12	19585	.038	20415	.12	24100	10	25450	10
NH	27394.	10	28605							

Cross Section 2.0
Cross Section B (HSM Draft)

X1	234100	84	19585	20415	2500	8000	7400		0	
GR	150.	1415.	125.	2465.	120.	2585.	120.	2625.	125.	2915.
GR	125	3450	125.	4135.	120.	4415.	120.	4765.	125.	4865.
GR	131.	5715.	125.	6175.	130.	9715.	130.	9885.	125.	9915.
GR	125.	10035.	128.	10165.	125.	10275.	125.	10515.	130.	10875.
GR	125.	11075.	125	13400	142	15014	129	15050	128.4	18715.
GR	126.1	18915.	127.3	19015.	126.4	19115.	129.	19415.	126.9	19565.
GR	121.9	19585.	106.3	19595.	100.1	19875.	101.1	19895.	101.7	20000.
GR	102.7	20175.	106.2	20325.	110.	20371.5	112.	20384.1	114.	20394.9
GR	116.	20402.5	118.	20408.2	120.	20412.8	121.	20415.	122.	20417.2
GR	122.	21233.1	120.	21638.9	118.	21652.6	116.	21668.8	116.	21689.8
GR	118.	21695.5	120.	21701.3	120.	21739.7	120.	21758.	120.	21884.
GR	120.	22858.3	120.	22976.6	120.	23128.4	122.	23490.4	124.	23568.9
GR	124.	24160	124.	25062.7	124.	25450.	124.	25621.9	124.	26132.9
GR	124.	26362.6	126.	26437.4	126.	26506.4	124.	26969.2	124.	27025.7
GR	124.	27035.7	124.	27394	126.	27562.6	128.	27892.8	130.	27995.3
GR	132.	28086.5	134.	28171.3	136.	28215.1	138.	28309.5	140.	28433.9
GR	142.	28483.5	144.	28533.8	146.	28571.2	148.	28605	0.	0.
H	13	.18	18400	.180	20000	.12	21850	.035	23850	
J	24650	.035	29870	.038	30700	.12	33840	.175	36610	
NH	37010	.08	37200	.175	41300	.12	42300			
QT	6	148000	242000	291400	291400	435000				
	12	364000	262000	278300	318200	310000	236300	145300	159000	138000
	219600	258600	364700							

PRELIMINARY ET DATA

ET	0.	0.	0.	9.11	0.	0.	0.	28450.	379
REVISED PRELIMINARY ET DATA									
set-2 set-2 8/99 8/99									

ET		7.11	9.11	7.11	19835	35900	28331	35900
REVISED NH TO REFLECT EFFECTIVE FLOW AREA IN LEFT OVERBANK with bridge								
NH	16	10.0	18030	.12	24200	10.0	24800	.12
NH	28331	.12	29870	.038	30700	.12	31080	10
NH	33840	.175	36610	10	37010	10	37200	10
NH	41300	10	42830					

X1	238900	55	29870	30700	3800	3500	4800	0	0	0
C	150	17200	125	18030	120	18340	120	18400	125	18600
Gk	125	19100	125	19700	120	20000	120	20250	125	20320
GR	130	20400	130	20950	125	21850	125	23850	122.50	24000.00
GR	120	24150	120	24200	120	24500	125	24800	125	25600
GR	125	27480	125	28000	142	28331	126	28372	121.9	29870
GR	106.3	29880	100.1	30160	101.1	30180	102.7	30460	106.2	30610
GR	123.1	30700	123	31080	123	31200	110.9	31300	122.2	31325
GR	123	31400	121	31800	120.5	31900	125	32000	125	33840
GR	124	34250	125	34550	125	35850	125	36610	125	37010
GR	125	37200	125	39800	125	41300	130	41500	135	41750
GR	140	42000	145	42150	150	42300	155	42450	175	42830

BEGIN CODING OF EXISTING INTERCHANGE FILL FOR TWELFTH STREET

HSM n-values										
NH	13	.18	18400	.180	20000	.12	21850	.035	23850	.
NH	24650	.035	29870	.038	30700	.12	33840	.175	36610	.
NH	37010	.08	37200	.175	41300	.12	42300			

PRELIMINARY ET DATA										
ET	0.	0.	0.	0.	9.11	0.	0.	0.	28810	400

REVISED PRELIMINARY ET DATA

set-2	set-2	8/99	8/99
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ET	7.11	9.11	7.11	21160	35900	28331	35900			
NC	.1	.3								
REVISED NH TO REFLECT EFFECTIVE FLOW AREA IN LEFT OVERBANK w-bridge										
NH	16	10.0	19100	.12	24800	10	25600	.12	28331	.12
NH	29870	.038	30700	.12	31080	10	32000	.12	33840	.175
NH	34250	10	34550	.175	36610	10	39800	.2	41300	1
NH	42300	10	42830							
X1	239370	0	0	0	470	470	470	0	0.05	0

CODING OF INTERCHANGE FILL INCLUDED

NC	0	0	0	.1	.3	0	0	0	0	0
	15.	0.18	370.	0.185	1470.	0.12	1670.	0.035	5270.	0.12
	6020.	0.035	9070.	0.12	9170.	0.035	9575.	0.038	10425.	0.12
	13170	0.175	17170.	0.08	17570.	0.175	17870.	0.035	18170.	0.12
	21691	0	0.	0.	0.	0.	0.	0.	0.	0.
REVISED NH TO REFLECT EFFECTIVE FLOW AREA IN LEFT OVERBANK -br										
NH	12	.12	5200	10	6800	.12	9575	0.038	10425	.12
NH	10835	10	11904.2	0.12	13736.	0.175	14000	10	14400	.2
NH	16200	10	19750	10	21691					
set-2 set-2 8/99 8/99										
ET	0.	0.	7.11	0.	9.11	7.11	560	15700	9030	15700

Cross Section 3.0

	239800	94	9575	10425	430	430	430	0	
	-50.	-2700.	125.	-1900.	120.	-1850.	120.	-1380.	125.
GR	125.	-200	120.	200.	125.	400.	130.	530.	130.
GR	130.	1800.	125.	2130.	125.	4000.	120.	4050.	120.
GR	120.	4550.	125.	4760.	125.	5200	125.	6020.	125.
GR	125	7820	130.	7930.	132.	8300.	137	9030	130
GR	130.	9395.	125.	9575.	106.3	9600.	100.	9875.	101.
GR	101.47	10000.	102.3	10175.	110.	10291.1	120.	10343.	120.
GR	121.56	10425.	122.	10433.7	124.	10467.7	126.	10490.5	126.
GR	124.	10865.3	122.	10894.8	122.	10916.9	124.	10939.6	124.
GR	122.	11209.2	122.	11220.3	124.	11308.8	124.	11567.4	122.
GR	120.	11904.2	118.	12226.4	116.	12361.6	114.	12415.3	112.
GR	112.	12813.5	110.	12849.8	110.	12923.6	112.	12929.5	114.
GR	124.	12980.7	126.	13042.1	126.	13170.	126.	13736	128.
GR	130.	13825.4	130	14000	129	14400	128.	15864.9	144.
GR	142	16200	139.1	17170	138.	17453.7	132.	17568.8	132.
GR	132.	17597.7	162.	17818.7	160.23	17870.	158.	17934.5	132.
GR	132.	18165.2	132.46	18170.	134.	18186.2	148.	18322.	150.
GR	124.	18644.1	124.	18657.9	126.	18669.5	130.	18713.6	130.
GR	128.	19076.3	128.	19089.9	130.	19138.7	130.	19750	130.
GR	132.	20406.6	132.	21481.5	138.	21690.9	138.	21691.	

CODING OF INTERCHANGE INCLUDED

HSM&M n-values

12	.12	12275	.034	13125	.12	15975	.175	18495	.06
19025	.175	19825	.12	20315	1	21055	1	21405	1
23105	.20	24175	.20	24800	0	0	0	0	0

REVISED PRELIMINARY RT DATA

					set-2	set-2	8/99	8/99				
ET		7.11		9.11	10.41	5400	18688	12061	18600			
						w-br						
NC												
NH												
	19	10	3550	.06	4500	10	6200	.06	8000	10		
	12061	0.120	12275	.034	13125	.12	13600	10	15000	.12		
	15975	.06	16700	10	17370	.175	18495	.06	19025	10		
NH	19825	10	20315	10	21055	1	24175	10	24800			
X1	241500	95	12275	13125	2000	800	1700	0	0	0		
GR	150	1	125	800	120	850	120	1320	125	1400		
GR	125	1800	125	2400	120	2900	120	3070	125	3100		
GR	130	3300	130	3550	130	4500	125	4830	125	5300		
GR	125	6200	125	6700	120	6900	120	7250	125	7460		
GR	125	8000	125	10520	130	10630	132	11000	132	11950		
GR	141	12061	125	12275	106.3	12300	100	12575	101	12600		
GR	102.8	12875	106.2	13035	111.8	13100	125	13125	130	13140		
GR	130	13600	125	14300	125	15000	127	15300	128	15900		
GR	127.4	15975	125	16300	125	16700	127	17000	125	17370		
GR	123	18300	123.4	18495	124.4	19025	125	19350	126.5	19825		
GR	128	20315	130	20335	132	20355	134	20365	136	20385		
GR	138	20400	140	20415	142	20425	144	20440	146	20450		
GR	148	20465	150	20475	152	20490	154	20535	152	20555		
GR	148	20605	150	20625	154	20655	154	20755	156	20845		
GR	154	20865	152	20885	150	20905	148	20915	146	20925		
GR	144	20935	142	20945	140	20955	138	20965	136	20975		

GR	134	20995	132	21010	130	21015	128	21035	126	21055
	126.9	21405	125.3	23105	125	24000	127.9	24175	130	24300
...	135	24470	140	24600	145	24700	150	24800	155	24800

REVISED PRELIMINARY ET DATA

set-2 set-2 8/99 8/99

ET	0.	0.	7.11	0.	9.11	10.41	5400	18500	12104	18900
	REVISED	NH TO	REFLECT	EFFECTIVE	FLOW AREA	IN LEFT	OVERBANK	-br		
NC										
NH	18	10	3800	.06	4830	10	6400	.06	8100	10
NH	11900	.12	12275	.034	13125	.12	13300	10	15270	.12
NH	15975	.175	18495	.06	19025	10	20315	10	21055	1
NH	21405	1	23105	.2	24175	10	24700	0		
X1	241850	63	12275	13125	350	350	350	0	0	0
GR	150	1	125	800	120	850	120	1320	125	1400
GR	125	1800	125	2600	120	2900	120	3070	125	3100
GR	127	3230	130	3600	130	3800	130	4500	125	4830
GR	125	5500	125	6400	125	6700	120	6750	120	7000
GR	120	7250	125	7460	125	8100	125	10520	130	10630
GR	132	11000	135	11900	148	12104	125	12275	106.3	12300
GR	100	12575	101	12600	102.8	12875	106.2	13035	111.8	13100
GR	125	13125	126.7	13130	130	13140	127	13300	125	14300
GR	126	15270	128	15900	127.4	15975	125	16300	125	16620
GR	125	17350	123	18300	123.4	18495	124	18730	126	19025
GR	128	20315	140	20415	154	20535	156	20845	134	20995
GR	128	21055	126	21405	125.3	23105	125.3	23410	127.9	24175
GR	135	24470	140	24600	145	24700				

cross sections 242049, 242050, 242120, 242121, 242169, 242170, 242240, 242241

NC	0	0	0	.3	.5	0	0	0	0	0
	8	.11	10765	.034	12065	.06	13935	.034	15375	.06
	15990	.034	17470	.06	21420	.08	22200	0	0	0
	REVISED	NH TO	REFLECT	EFFECTIVE	FLOW AREA	IN LEFT	OVERBANK			
NH	17	10	315	10	850	10	1320	10	3070	.06
NH	3640	10	5440	.12	6940	10	10765	.034	12065	10
NH	14000	.034	15375	.06	15800	.034	16375	.034	17470	.06
NH	17800	1	21420	.2	22200					
					set-2	set-2	8/99	8/99		
ET			7.11		9.11	7.11	5540	17240	10815	17900
X1	242049	87	10815	12065	179	179	179	0	0	0
GR	150	1	140	315	125	800	120	850	120	1320
GR	125	1500	125	2600	120	2900	120	3070	125	3100
GR	130	3230	130	3640	130	4500	125	4830	125	5440
GR	125	5600	120	6750	120	6940	120	7250	125	7460
GR	125	9415	125	10520	130	10630	132	10765	153	10815
GR	133	11025	101	11095	100	11123	151.2	11123.1	151.2	11147
GR	100	11147.1	105	11525	100	11663	152	11663.1	152	11687
GR	100	11687	102	11690	133	11785	130.8	12015	154.8	12065
GR	147	12700	148.8	13935	118	14000	117	14235	149.3	14235.1
GR	149.3	14290	116	14290.1	115	14350	114	14480	106	14525
GR	106	14555	111	14570	117	14620	129	14650	129	14925
GR	152	14925.1	152	14980	129	14980.1	127	15320	155	15375
GR	156.6	15800	156.6	15990	127	16050	127.0	16325	153.5	16325.1

GP	153.5	16375	127	16375.1	127	17075	145.7	17075.1	145.7	17125
	127	17125.1	127	17454	145	17470	144.5	17800	144.5	20350
GR	147	21420	130	21457	131	21713	147.6	21713.1	147.6	21730
GR	131	21730.1	130	21982	152.6	21982.1	152.6	22000	130	22001
GR	130	22145	158.7	22200						

SOUTH EASTERN BELTWAY

HSM&M n-values
 NH 8 .11 10765 .034 12065 .06 13935 .034 15375 .
 NH 15990 .034 17470 .06 21420 .08 22200 0 0
 REVISED NH TO REFLECT EFFECTIVE FLOW AREA IN LEFT OVBANK w-br
 n-values, left to reflect d/s ground; ineffective flow due to hig section

NH	15	10	455.1	10	588.9	10	1404.1	10	3100.1	.11
NH	3300.1	.11	3435	.11	6900	.11	10815	.034	12065	.06
NH	13935	.034	15375	.06	15990	.034	17470	.06	21420	.2
NH	22145									
BT	0		7.11	0	set-2 9.11	set-2 7.11	8/99 5540	8/99 17240	10815	17900
X1	242050	95	10815	12065	1	1	1	0	0	0
X1242050	106	10765	12065	1	1	0	0			
BT	31	348.1	157	151	588.9	157	151	1380	154	154
BT	1380.1	154	128	1404	154	128	1404.1	154	154	2955.1
BT	155	146.1	3434.9	155	145.7	3435	155	147.2	5580.1	155
BT	143.5	6900	155	143.5	9113.1	155	145.5	9263	155	149.5
BT	10757	155	149	10765	155.1	149.1	11123	160.3	151.2	11663
BT	160.3	152	12065	155	150	12700	147	0	13935	148.8
BT	147.6	14235	150.2	149.1	14925	153.1	152	15375	154.8	153.7
BT	15375	154.8	0	15990	156.7	155	16325	155.1	153.2	17075
BT	147.5	145.8	17470	145	143	21420	146.9	144.9	21713	149.6
BT	147.6	21982	154.6	152.6	0	0	0			
GR	150	348.1	133	400	133	455	150	455.1	150	457.9
GR	133	458	133	536	150	588.9	154	1380	120	1380.1
	120	1404	154	1404.1	145	2955.1	120	3020	120	3100
	145	3100.1	145	3110	120	3110.1	120	3300	145	3300.1
GR	145	3310	120	3310.1	120	3380	125	3434.9	147.2	3435
GR	143	5580.1	121.5	5626	120	6848	143	6900	145	9113.1
GR	130	9150	130	9227	145	9263	145	9415	147	10757
GR	132	10765	153	10815	133	11025	101	11095	100	11123
GR	151.2	11123	151.2	11147	100	11147	105	11525	100	11663
GR	152	11663	152	11687	100	11687	102	11690	133	11785
GR	130.8	12015	154.8	12065	147	12700	148.8	13935	118	14000
GR	117	14235	149.3	14235	149.3	14290	116	14290	115	14350
GR	114	14480	106	14525	106	14555	111	14570	117	14620
GR	129	14650	129	14925	152	14925	152	14980	129	14980
GR	127	15320	155	15375	156.6	15990	127	16050	127.0	16325
GR	153.5	16325	153.5	16375	127	16375	127	17075	145.7	17075
GR	145.7	17125	127	17125	127	17454	145	17470	147	21420
GR	130	21457	131	21713	147.6	21713	147.6	21730	131	21730
GR	130	21982	152.6	21982	152.6	22000	130	22000	130	22145

NH 8 .11 10765 .034 12065 .06 13935 .034 15375 .

NH 15990 .034 17470 .06 21420 .08 22200 0 0
 REVISD NH TO REFLECT EFFECTIVE FLOW AREA IN LEFT OVBANK
 n-values, left to reflect d/s ground; ineffective flow due to hig section

NH	9	10	3100.1	.11	10815	.034	12065	.06	13935	.034
NH	15375	.06	15990	.034	17470	.06	21420	.2	22145	0
RT	0		7.11	0	9.11	7.11	5540	17240	10815	17900
X1	242120	95	10815	12065	70	70	70	0	0	0
BT	30	348.1	157	151	588.9	157	151	1380	154	154
BT	1380.1	154	128	1404	154	128	1404.1	154	154	2955.1
BT	155	146.1	3434.9	155	145.7	3435	155	147.2	5580.1	155
BT	143.5	6900	155	143.5	9113.1	155	145.5	9263	155	149.5
BT	10757.1	155	149	11123	160.3	151.2	11663	160.3	152	12065
BT	155	150	12700	147	0	13935	148.8	147.6	14235	150.2
BT	149.1	14925	153.1	152	15375	154.8	153.7	15375	154.8	0
BT	15990	156.7	155	16325	155.1	153.2	17075	147.5	145.8	17470
BT	145	143	21420	146.9	144.9	21713	149.6	147.6	21982	154.6
BT	152.6	0	0	0						
GR	150	348.1	133	400	133	455	150	455.1	150	457.9
GR	133	456	133	536	150	588.9	154	1380	120	1380.1
GR	120	1404	154	1404.1	145	2955.1	120	3020	120	3100
GR	145	3100.1	145	3110	120	3110.1	120	3300	145	3300.1
GR	145	3310	120	3310.1	120	3380	125	3434.9	147.2	3435
GR	143	5580.1	121.5	5626	120	6848	143	6900	145	9113.1
GR	130	9150	130	9227	145	9263	145	9415	147	10757.1
GR	132	10765	153	10815	133	11025	101	11095	100	11123
GR	151.2	11123	151.2	11147	100	11147	105	11525	100	11663
GR	152	11663	152	11687	100	11687	102	11690	133	11785
GR	130.8	12015	154.8	12065	147	12700	148.8	13935	118	14000
GR	117	14235	149.3	14235	149.3	14290	116	14290	115	14350
GR	114	14480	106	14525	106	14555	111	14570	117	14620
GR	129	14650	129	14925	152	14925	152	14980	129	14980
GR	127	15320	155	15375	156.6	15990	127	16050	127.0	16325
GR	153.5	16325	153.5	16375	127	16375	127	17075	145.7	17075
GR	145.7	17125	127	17125	127	17454	145	17470	147	21420
GR	130	21457	131	21713	147.6	21713	147.6	21730	131	21730
GR	130	21982	152.6	21982	152.6	22000	130	22000	130	22145

set-2 set-2 8/99 8/99

ET	0		7.11	0	9.11	7.11	5540	17240	10815	18000
NH	8	.11	10765	.034	12065	.06	13935	.034	15375	.
NH	15990	.034	17470	.06	21420	.08	22200	0	0	0
REVISD NH TO REFLECT EFFECTIVE FLOW AREA IN LEFT OVBANK										
NC				1	3					
NH	14	10.0	850	10	1320	10	3070	.11	3540	10
NH	5600	.06	6750	10	10815	.034	12065	.06	13935	.034
NH	15375	.06	15990	.034	17470	.06	21420	.2	22200	0
X1	242121	84	10815	12065	1	1	1	0	0	0
GR	150	1	125	800	120	850	120	1320	125	1400
GR	125	2300	125	2600	120	2900	120	3070	125	3100
GR	127	3540	130	4200	130	4500	125	4830	125	5600
GR	125	6700	120	6750	120	7250	125	7460	125	9415

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GR	125	10520	130	10630	132	10765	153	10815	133	11025
	101	11095	100	11123	151.2	11123	151.2	11147	100	11147
	105	11525	100	11663	152	11663	152	11687	100	11687
GR	102	11690	153	11785	130.8	12015	154.8	12065	147	12700
GR	148.8	13935	118	14000	117	14235	149.3	14235	149.3	14290
GR	116	14290	115	14350	114	14480	106	14525	106	14555
GR	111	14570	117	14620	129	14650	129	14925	152	14925
GR	152	14980	129	14980	127	15320	155	15375	156.6	15990
GR	127	16050	127.0	16325	153.5	16325	153.5	16375	127	16375
GR	127	17075	145.7	17075	145.7	17125	127	17125	127	17454
GR	145	17470	144.5	20350	147	21420	130	21457	131	21713
GR	147.6	21713	147.6	21730	131	21730	130	21982	152.6	21982
GR	152.6	22000	130	22000	130	22145	158.7	22200		
NH	8	.11	10765	.034	12065	.034	13935	.034	15375	
NH	15990	.034	17470	.06	21420	.08	22200	0	0	

REVISED NH TO REFLECT EFFECTIVE FLOW AREA IN LEFT OVBANK

NC				3	.5					
NH	13	10.0	850	10	3070	.11	3529	10	5600	.06
NH	6829	10	10793	.034	12065	.06	13935	.034	15375	.06
NH	15990	.034	17470	.06	21420	.2	22200			
				set-2	set-2	8/99	8/99			
ET	0		7.11	0	9.11	7.11	5540	17240	10793	17500
X1	242169	85	10793	12065	49	49	49	0	0	0
GR	150	1	125	800	120	850	120	1320	125	1400
GR	125	2300	125	2600	120	2900	120	3070	125	3100
GR	127	3529	130	4200	130	4500	125	4830	125	5600
GR	125	6700	120	6750	120	6829	120	7250	125	7460
GR	125	9415	125	10520	130	10630	132	10765	153	10793
GR	133	11025	101	11095	100	11123	151.2	11123	151.2	11147
GR	100	11147	105	11525	100	11663	152	11663	152	11687
GR	100	11687	102	11690	133	11785	130.8	12015	154.8	12065
GR	147	12700	148.8	13935	118	14000	117	14235	149.3	14235
GR	149.3	14290	116	14290	115	14350	114	14480	106	14525
	106	14555	111	14570	117	14620	129	14650	129	14925
	152	14925	152	14980	129	14980	127	15320	155	15375
GR	156.6	15990	127	16050	127.0	16325	153.5	16325	153.5	16375
GR	127	16375	127	17075	145.7	17075	145.7	17125	127	17125
GR	127	17454	145	17470	144.5	20350	147	21420	130	21457
GR	131	21713	147.6	21713	147.6	21730	131	21730	130	21982
GR	152.6	21982	152.6	22000	130	22000	130	22145	158.7	22200
NH	8	.11	10765	.034	12065	.034	13935	.034	15375	
NH	15990	.034	17470	.06	21420	.08	22200	0	0	

REVISED NH TO REFLECT EFFECTIVE FLOW AREA IN LEFT OVBANK

NH	9	10	3100.1	.11	10793	.034	12065	.06	13935	.034
NH	15375	.06	15990	.034	17470	.06	21420	.2	22145	0
				set-2	set-2	8/99	8/99			
ET	0		7.11	0	9.11	7.11	5540	17240	10793	17500
X1	242170	95	10793	12065	1	1	1	0	0	0
BT	31	348.1	157	151	588.9	157	151	1380	154	154
BT	1380.1	154	128	1404	154	128	1404.1	154	154	2955.1
BT	147.6	146.1	3434.9	147.2	145.7	3435	147.2	147.2	5580.1	145
BT	143.5	6900	145	143.5	9113.1	149.5	145.5	9263	149.5	149.5

BT	10757.	155	149	10765	155.1	149.1	11123	160.3	151.2	11663
	160.3	152	12065	155	150	12700	147	0	13935	148.8
L-	147.6	14235	150.2	149.1	14925	153.1	152	15375	154.8	153.7
BT	15375	154.8	0	15990	156.7	155	16325	155.1	153.2	17075
BT	147.5	145.8	17470	145	143	21420	146.9	144.9	21713	149.6
BT	147.6	21982	154.6	152.6	0	0	0	0	0	457.9
GR	150	348.1	133	400	133	455	150	455.1	150	1380.1
GR	133	458	133	536	150	588.9	154	1380	120	3100
GR	120	1404	154	1404.1	145	2955.1	120	3020	120	3300.1
GR	145	3100.1	145	3110	120	3110.1	120	3300	145	3435
GR	145	3310	120	3310.1	120	3380	125	3434.9	147.2	9113.1
GR	143	5580.1	121.5	5626	120	6848	143	6900	145	10757
GR	130	9150	130	9227	145	9263	145	9415	100	11123
GR	132	10765	153	10793	133	11025	101	11095	100	11663
GR	151.2	11123	151.2	11147	100	11147	105	11525	100	11785
GR	152	11663	152	11687	100	11687	102	11690	133	14000
GR	130.8	12015	154.8	12065	147	12700	148.8	13935	118	14350
GR	117	14235	149.3	14235	149.3	14290	116	14290	115	14620
GR	114	14480	106	14525	106	14555	111	14570	117	14980
GR	129	14650	129	14925	152	14925	152	14980	129	16325
GR	127	15320	155	15375	156.6	15990	127	16050	127.0	17075
GR	153.5	16325	153.5	16375	127	16375	127	17075	145.7	21420
GR	145.7	17125	127	17125	127	17454	145	17470	147	21730
GR	130	21457	131	21713	147.6	21713	147.6	21730	131	22145
GR	130	21982	152.6	21982	152.6	22000	130	22000	130	
					set-2	set-2	8/99	8/99		

BT	0	7.11	0	9.11	7.11	5540	17240	10806	17500
NH	8	.11	10765	.034	12065	.06	13935	.034	15375
NH	15990	.034	17470	.06	21420	.08	22200	0	0
	REVISED NH TO REFLECT EFFECTIVE FLOW AREA IN LEFT OVBANK								
NH	10	10	3100.1	.11	9415	.11	10806	.034	12065
NH	13935	.034	15375	.06	15990	.034	17470	.06	21420
NH	22145	0							
	242240	94	10806	12065	70	70	70	0	0
	30	348.1	157	151	588.9	157	151	1380	154
BT	1380.1	154	128	1404	154	128	1404.1	154	2955.1
BT	155	146.1	3434.9	155	145.7	3435	155	147.2	5580.1
BT	143.5	6900	155	143.5	9113.1	155	145.5	9263	155
BT	10757	155	149	11123	160.3	151.2	11663	160.3	152
BT	155	150	12700	147	0	13935	148.8	147.6	14235
BT	149.1	14925	153.1	152	15375	154.8	153.7	15375	154.8
BT	15990	156.7	155	16325	155.1	153.2	17075	147.5	145.8
BT	145	143	21420	146.9	144.9	21713	149.6	147.6	21982
BT	152.6								
GR	150	348.1	133	400	133	455	150	455.1	150
GR	133	458	133	536	150	588.9	154	1380	120
GR	120	1404	154	1404.1	145	2955.1	120	3020	120
GR	145	3100.1	145	3110	120	3110.1	120	3300	145
GR	145	3310	120	3310.1	120	3380	125	3434.9	147.2
GR	143	5580.1	121.5	5626	120	6848	143	6900	145
GR	130	9150	130	9227	145	9263	145	9415	147
GR	132	10765	150.60	10806	133	11025	101	11095	100
GR	151.2	11123	151.2	11147	100	11147	105	11525	100

GR	152	11663	152	11687	100	11687	102	11690	133	11785
GR	130.8	12015	154.8	12065	147	12700	148.8	13935	118	14000
GR	117	14235	149.3	14235	149.3	14290	116	14290	115	14350
GR	114	14480	106	14525	106	14555	111	14570	117	14620
GR	129	14650	129	14925	152	14925	152	14980	129	14980
GR	127	15320	155	15375	156.6	15990	127	16050	127.0	16325
GR	153.5	16325	153.5	16375	127	16375	127	17075	145.7	17075
GR	145.7	17125	127	17125	127	17454	145	17470	147	21420
GR	130	21457	131	21713	147.6	21713	147.6	21730	131	21730
GR	130	21982	152.6	21982	152.6	22000	130	22145		
					set-2	set-2	8/99	8/99		
BT	0	7.11	0	9.11	7.11	5540	17240	10806	17300	
NH	8	.11	10765	.034	12065	.06	13935	.034	15375	
NH	15990	.034	17470	.06	21420	.08	22200	0	0	
NH	12	10.0	3070	.11	3535	10	5535	.11	6835	10
NH	10806	.034	12065	.06	13935	.034	15375	.06	15990	.034
NH	17470	.06	21420	.2	22200					
X1	242241	87	10806	17065	1	1	1	0	0	0
GR	150	1	125	800	120	850	120	1320	125	1400
GR	125	1600	125	2400	125	2600	120	2900	120	3070
GR	125	3100	130	3230	130	3535	130	4500	125	4830
GR	125	5535	125	5700	125	6700	120	6750	120	6835
GR	120	7250	125	7460	125	9415	125	10520	130	10630
GR	132	10765	150.6	10806	133	11025	101	11095	100	11123
GR	151.2	11123	151.2	11147	100	11147	105	11525	100	11663
GR	152	11663	152	11687	100	11687	102	11690	133	11785
GR	130.8	12015	154.8	12065	147	12700	148.8	13935	118	14000
GR	117	14235	149.3	14235	149.3	14290	116	14290	115	14350
GR	114	14480	106	14525	106	14555	111	14570	117	14620
GR	129	14650	129	14925	152	14925	152	14980	129	14980
GR	127	15320	155	15375	156.6	15990	127	16050	127.0	16325
GR	153.5	16325	153.5	16375	127	16375	127	17075	145.7	17075
GR	145.7	17125	127	17125	127	17454	145	17470	144.5	20350
GR	147	21420	130	21457	131	21713	147.6	21713	147.6	21730
GR	131	21730	130	21982	152.6	21982	152.6	22000	130	22000
GR	130	22145	158.7	22200						
					set-2	set-2	8/99	8/99		
ET		7.11		9.11	7.11	5540	17600	11800	17600	
NH	12	10	3912	.11	4662	10	6262	.06	8212	10
NH	11750	.038	12825	.11	13000	10	14500	.175	18820	10
NH	22000	.2	22800	1	25070					
X1	242440	82	11900	12825	199	199	0	0	0	0
GR	150	1	125	800	120	850	120	1320	125	1400
GR	125	1800	125	2600	120	2900	120	3070	125	3100
GR	130	3230	130	3700	130	3912	130	4500	127.5	4662
GR	125	4830	125	6262	125	6300	125	6700	120	6750
GR	120	7250	125	8200	125	8212	125	10368	125	10520
GR	130	10630	132	11000	130	11630	125	11750	147.56	11800
GR	135.52	11832	130.40	11900	128.9	11920	132	12000	102.4	12125
GR	106.5	12680	100.4	12775	131.3	12825	135	13000	130	13200
GR	131	13400	125	14500	118.9	15270	116.9	15370	113.9	15470

GR	103.9	15490	103.9	15510	113.9	15570	115.9	15970	118.9	16070
GR	130	16130	129.1	16520	124	18820	126	18850	128	18870
GR	130	18900	132	18925	134	18940	136	18960	138	18980
GR	140	19000	142	19020	144	19040	146	19080	148	19170
GR	150	19470	160	19545	164	19570	164	19620	160	19655
GR	150	20110	130	20380	128	20430	126	20440	124	20460
GR	122	20480	130	20610	132	20770	132	22000	132	22800
GR	132	24820	155	25070						

ADDITION OF INTERCHANGE INCLUDED

NC	0	0	0	.1	.3	0	0	0
NH	12	12	12000	.034	12825	.12	15225	.1
NH	17325	.06	17725	.175	18025	.06	18635	.12
NH	20075	.175	23005	.12	24200	0	0	0
REVISED NH TO REFLECT EFFECTIVE FLOW AREA IN LEFT OVERBANK w-br								
NH	18	10.0	4113	.11	5113	10	6413	.06
NH	11830	.12	12000	.038	12825	.12	13000	.10
NH	15225	.06	15325	.175	17325	.06	17725	.175
NH	18635	1	21200	.2	23005	10	24200	0
set-2 set-2 8/99 8/99								
BT	0	0	7.11	0	9.11	16.41	5412.5	17704
Y1	243000	80	12000	12825	560	560	560	11830
GR	156	1	134	350	133	400	133	0
GR	122.5	1200	125	1350	120	1380	120	536
GR	128.4	1500	129	2700	120	2750	119	129
GR	125.5	3775	123.4	4113	121.7	4425	122.3	127
GR	123.5	5250	123.5	5400	122	5580	121.5	1415
GR	120.8	6413	120.7	6848	120.7	6900	122	3750
GR	129	9113	129	9150	129.2	9227	129.2	5113
GR	123	10275	120.7	10570	126.5	10757	128.5	5900
GR	124.54	11920	133.1	12000	103.5	12125	107.6	9000
GR	132.4	12825	135	13000	130	13200	131	128.8
GR	120	14400	120	14500	115	14600	110	121
GR	115	14700	117	15100	120	15200	124.2	5900
GR	129.9	15325	127	17000	126.8	17325	126.5	9000
GR	126	18570	126.9	18635	132	19000	131.1	128.8
GR	130	19825	140	19865	146	19890	146	131
GR	130	20075	130.5	21200	131.5	23005	132	10185

ADDITION OF INTERCHANGE FILL
USED DATA FROM 2430+00 (ADJUSTED DUE TO SLOPE)

ET	0	0	0	0	9.11	0	0	0	12000	195
NH	10	12	12000	.034	12825	.12	15075	.175	15275	
NH	16595	.175	18815	.08	19085	.06	19265	.175	22315	
NH	24200	0	0	0	0	0	0	0	0	

REVISED NH TO REFLECT EFFECTIVE FLOW AREA IN LEFT OVBANK w-br

	15	10.0	4900	10	4900	10	5580	.06	10893	0.120
NH	12000	.038	12825	.12	13000	10	13400	.12	15100	.175
NH	15260	.12	16595	.175	18025	1	19185	1	23005	.2
NH	24200									
BT	0	0	7.11	0	set-2	set-2	8/99	8/99		
X1	245800	76	12000	12825	2800	2300	2800	17300	11800	17300
GR	156	0	134	350	133	400	133	0	0	0
GR	122.5	1200	125	1350	120	1380	120	536	129	590
GR	128.4	1500	129	2700	120	2750	119	1410	127	1415
GR	125.5	3775	121.7	4425	122.3	4450	123	2800	120	3750
GR	123.5	5400	122	5580	121.5	5624	120.7	4900	123.5	5250
GR	122	8800	128.8	9000	129	9113	129	6848	120.7	6900
GR	129.2	9264	131	10185	123	10275	120.7	9150	129.2	9227
GR	128.5	10893	145.70	11800	134	11920	133.1	10570	126.5	10757
GR	107.6	12680	101.5	12775	132.4	12825	135	12000	103.5	12125
GR	131	13400	125	14200	120	14400	120	13000	130	13200
GR	110	14620	110	14640	115	14700	117	14500	115	14600
GR	124.2	15225	130	15260	129.9	15325	127	15100	120	15200
GR	126.5	17725	126.3	18025	126	18570	126.9	16595	126.8	17325
GR	131.1	19185	128	19815	130	19825	140	18635	132	19000
GR	146	19995	140	20025	130	20075	131.5	19865	146	19890
GR	155	24200						23005	132	23950

NEW STATION USED DATA FROM 2430+00 (ADJUSTED DUE TO SLOPE)
JUST OUTSIDE OF INTERCHANGE FILL SECTION
END OF EXISTING INTERCHANGE

BT	0	0	0	0	9.11	0	0	0	12000	205
NH	7	.12	12000	.034	12825	.12	16595	.175	18815	.
NH	19215	.175	22365	.12	24200	0	0	0	0	0

REVISED NH TO REFLECT EFFECTIVE FLOW AREA IN LEFT OVBANK

	11	10.0	4612	.06	5250	10	5580	.06	10893	.12
NH	12000	.038	12825	.12	16595	.175	18815	1	19865	.2
NH	23005	10	24200	0						
BT	0	0	7.11	0	set-2	set-2	8/99	8/99		
X1	246000	77	12000	12825	200	200	200	16877	11815	17200
GR	156	1	134	350	133	400	133	0	0	0
GR	122.5	1200	125	1350	120	1380	120	536	129	590
GR	128.4	1500	129	2700	120	2750	119	1410	127	1415
GR	125.5	3775	121.7	4425	122.3	4450	122.5	2800	120	3750
GR	123.5	5400	122	5580	121.5	5624	120.7	4612	123.5	5250
GR	122	8800	128.8	9000	129	9113	129	6848	120.7	6900
GR	129.2	9264	131	10185	123	10275	120.7	9150	129.2	9227
GR	128.5	10893	144.70	11815	130.9	11920	133.1	10570	126.5	10757
GR	107.6	12680	101.5	12775	132.4	12825	135	12000	103.5	12125
GR	131	13400	125	14200	120	14400	120	13000	130	13200
GR	110	14620	110	14640	115	14700	117	14500	115	14600
GR	124.2	15225	130	15260	129.9	15325	127	15100	120	15200
GR	126.5	17725	126.3	18025	126	18570	126.9	16595	126.8	17325
GR								18635	127	18815

GR	132	19000	131.1	19185	128	19815	130	19825	140	19865
C	146	19890	146	19995	140	20025	130	20075	131.5	23005
G	132	23950	155	24200						

ET	0	0	7.11	0	9.11	7.11	8900	18800	14467	18800
	10	0.12	6650.	0.035	14050.	0.12	14587.	.1	15413.	0.12
	15750	.175	17450.	0.12	18850.	0.175	20550.	0.09	20850.	0.175
	24907	0	0.	0.	0.	0.	0.	0.	0.	0.
REVISED NH TO REFLECT EFFECTIVE FLOW AREA IN LEFT OVERBANK										
NH	11	10	7037.5	.06	12862	.06	14050	0.12	14587.	.04
NH	15413.	.12	15750	.175	17450.	.12	18850.	.175	19724	.1
NH	23512	.175	24907	0	0.	0.	0.	0.	0.	0.

Cross Section 4.0
Cross Section C (HSMM Draft)

X1	246700	93	14567	15413	700	700	700	0
GR	148.2587.5	134	2937.5	133.	2987.5	133.	3123.5	129.
GR	122.5	3787.5	120	3967.5	120.	3997.5	127.	4002.5
GR	129.	5287.5	120.	5337.5	119.	5387.5	120.	6337.5
GR	123.62	6650.	121.7	7012.5	122.3	7037.5	123.5	7837.5
GR	122.	8167.5	121.5	8211.5	121	9100	120.7	9487.5
GR	128.8	11587.5	129	11700.5	129.2	11851.5	131.	12772.5
GR	120.7	13157.5	126.5	13344.5	128.5	13480.5	128.39	14050.
GR	128.3	14507.5	133.07	14587	133.1	14587.5	103.5	14712.5
GR	101.5	15262	110	15262.2	132	15321.4	132	15412.5
GR	132	15446.3	130	15493.4	130	15653.3	128	15737.6
GR	120	15762.8	120	15888.5	122	15889.5	130	15949.5
GR	134	16097.6	134	16192.6	132	16566.6	130	16821.5
GR	128	17450	128	17564.9	130	17572.9	130	17577.7
GR	126	17601.4	126	17611.2	128	17622.5	128	17623.9
GR	126	17743.6	128	17925.8	128	18850.7	128	18850.7
GR	120	18894.5	118	18944.7	116	18984.3	116	19011.4
GR	118	19063.7	116	19075.8	116	19113.9	118	19117.9
GR	130	19505.8	132	19724	132	20550	132	20850
GR	134	23697.8	134	23905.8	132	24078.7	132	24100.5
GR	134	24787.9	140	24906.8	140	24907	0	0

NEW X-SECTION THAT REPRESENTS DOWNSTREAM EDGE OF ISLAND

ET	0	0.	0.	0.	9.41	0.	0.	0.	0.	
ET	0.	0.	7.11	0.	9.11	10.41	13257	23100	18790	23100
NH	11	.12	18900	.034	19725	.12	20425	.06	21425	
NH	23625	.175	24145	.06	24475	.175	25295	.08	25695	
NH	27345	12	29900	0	0	0	0	0	0	
REVISED NH TO REFLECT EFFECTIVE FLOW AREA IN LEFT OVERBANK										
NH	13	10.0	11500	.06	18700	0.120	16900	.038	19725	.12
NH	20425	.06	21425	.12	23625	.175	24145	1	24475	1
NH	25295	1	25695	1	27345	.12	29900	0	0	0

X1	247000	62	18900	19725	300	300	300	0	0	0
GR	175	6000	170	7000	160	8000	155	9000	153	9050
GR	125	9900	125	10800	130	11500	130	12400	125	12800
GR	125	13070	127	13500	123.5	13625	128	13850	126	14000
GR	126.3	15100	132.7	15900	130.5	16300	133	17300	135.3	18100
GR	134.3	18200	123.1	18280	126.2	18480	117.9	18640	118.3	18700
GR	142.50	18790	128.9	18820	133.1	18900	103.5	19025	107.6	19580
GR	101.5	19675	132.4	19725	130.5	20080	117	20110	128.1	20180
GR	121.2	20280	135.1	20400	135	20425	129.4	21425	129	21500
GR	127	22150	126.5	23100	128.9	23175	112	23275	117.5	23300
GR	109.8	23425	129.5	23525	130.9	23625	132	23700	131	24000
GR	133	24100	132.9	24145	132.6	24475	131.9	25295	131.5	25695
GR	131.1	26100	133.3	27345	133.9	27690	133	29000	130	29190
GP	136	29450	180	29900	0	0	0	0	0	0

USED DATA FROM 2470+00 (ADJUSTED DUE TO SLOPE) AND CODING OF ISLAND

ET	0.	0.	7.11	0.	9.11	7.41	13362	23100	18800	23100
ET	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
NH	9	12	18900	.034	19725	.12	20375	.06	21475	
NH	23625	175	24125	.06	25215	.08	25715	.175	26690	
REVISED NH TO REFLECT EFFECTIVE FLOW AREA IN LEFT OVERBANK										
NH	12	10.0	11500	.06	18700	0.120	18900	.038	19725	.12
NH	20375	.06	21475	.12	23625	.175	24125	1	25215	1
NH	25715	10	26690	.175	28600					
X1	247200	61	18900	19725	200	200	200	0	0	0
GR	175	6000	170	7000	160	8000	155	9000	153	9050
GR	125	9900	125	10800	130	11500	130	12400	125	12800
GR	125	13070	127	13500	123.5	13625	128	13850	126	14000
GR	126.3	15100	132.7	15900	130.5	16300	132	17300	135.3	18100
GR	134.3	18200	123.1	18280	126.2	18480	117.9	18640	118.3	18700
GR	142.50	18800	128.9	18820	133.1	18900	103.5	19025	107.6	19580
GR	101.5	19675	132.4	19725	130.5	20080	117	20140	128.1	20180
GR	121.2	20280	132.2	20375	135.1	20400	134.7	21475	129	21500
GR	127	22150	126.5	23100	128.9	23175	112	23275	117.5	23300
GR	109.8	23425	129.6	23525	131	23625	132	23700	131	24000
GR	133	24100	132.9	24125	131.9	25215	131.5	25715	131.1	26100
GR	140	26250	145	26390	150	26690	134	27000	134	28500
GR	156	28600								

28600
USED DATA FROM 2493+00 (ADJUSTED DUE TO SLOPE) INCLUDES ISLAND

[illegible]

	1947	1948	1949	1950	1951	1952	1953	1954	1955
X1	248200	55	13000	13676	1000	1000	1000	0	0
G	175	0	170	940	150	1940	155	2940	153
Gn	125	3840	125	4740	130	5440	130	6000	130
GR	125	6740	125	7010	127	7440	123.5	7565	128
GR	126	7940	126.3	9040	132.7	9840	130.5	10240	135.3
GR	134.3	12140	123.1	12220	126.2	12420	117.9	12580	118.3
GR	145.00	12860	128.9	12900	120.6	13000	104.3	13075	105.2
GR	104.3	13280	105.2	13435	102.5	13605	123.4	13676	122.3
GR	122.4	13705	136.5	14100	136.6	14126	135.1	14555	135
GR	127	14900	124.5	16086	124	16300	125	17300	105
GR	118.9	17486	125	17536	125	17906	148	18106	148
GR	155	19426	148	20950	138	20960	138	21460	156

[illegible]

Cross Section 5.0
Cross Section D (HSMM Draft)

	249300	88	9662	10338	1100	1100	0.
X1	175.	-3338.	170.	-2398.	160.	-1398.	153.
	125.	502.	125.	1402.	130.	3002.	125.
GR	130	3002	125	3402	127.	4102.	123.5
GR	126.	4602.	126	5000	126.3	5702.	132.7
GR	134	7700	135.3	8702.	134.3	8802.	123.1
GR	117.9	9242.	118.3	9302.	142.50	9390	128.9
GR	121.7	9662	105.4	9737	106.3	9787	105.4
GR	106.3	10097	103.6	10267	110	10273.1	112
	116	10317.9	118	10328.2	119.05	10338	120
	124	10390.6	126	10415.7	128	10434	130
GR	130	10633.3	132	10643.8	134	10654.4	136
GR	134	11158.5	134	11175.4	134	11209.5	132
GR	130	11739.5	132	11779.9	132	12091.5	130
GR	126	12784.7	124	12800	122	12816	122
GR	120	13244.2	120	13251.2	122	13303.4	122
GR	120	13763	122	13861.8	122	13924.7	120
GR	122	14150.3	122	14264.7	120	14328.4	120
GR	124	14657.8	126	14663.8	128	14670.8	130
GR	134	14691.7	136	14697.3	138	14705.4	140
GR	144	14773.8	146	14813.2	148	14887	

NH	5	.12	13000	.034	13676	.06	13926	.175	16026
NH	18100	0	0	0	0	0	0	0	0

	0.	0.	7.11	0.	9.11	12.41	8208	16600	12740	16600
	REVISED NH TO REFLECT EFFECTIVE FLOW AREA IN LEFT OVRBANK									
NH	9	10.0	7010	06	12040	0.120	13000	.038	13676	.06
NH	13926	.175	16026	.12	17400	.12	18100	1	18340	0
X1	249590	54	13000	13676	290	290	290	0	0	0
GR	175	1	170	940	160	1940	155	2940	153	2990
GR	125	3840	125	4740	130	5440	130	6340	125	6740
GR	125	7010	127	7440	123.5	7565	128	7790	126	7940
GR	126	8600	126.3	9040	132.7	9840	130.5	10240	135.3	12040
GR	134.3	12140	123.1	12220	126.2	12420	117.9	12580	118.3	12640
GR	145.30	12740	132	12820	125	12900	121.7	13000	105.4	13075
GR	106.3	13125	105.4	13280	106.3	13435	103.6	13605	124.5	13676
GR	123.4	13700	124.5	13705	131.8	13926	137.6	14100	135.1	14555
GR	135	14850	127	14900	124.6	16026	124	16300	125	17300
GR	120	17350	123	17400	125	17880	120	17950	125	18100
GR	130	18200	135	18260	140	18300	150	18340		

USED DATA FROM 2534+00 (ADJUSTED DUE TO SLOPE)

	6	.12	6089	.034	6695	.12	6895	.06	7095	.1
NH	9655	.12	11155	0	0	0	0	0	0	
ET	REVISED NH TO REFLECT EFFECTIVE FLOW AREA IN LEFT OVRBANK									
	7	10.0	4020	0.120	6089	.034	6695	.024	7032	.175
	9100	.12	11525	.024	11730	0	0	0	0	0
	revised rob NH to model effective flow 6-29-99 dad									
NH	8	10.0	1300	.06	5320	0.120	6089	.038	6695	.06
NH	7095	.175	9700	.12	11076	1	11730	0	0	0
X1	250770	34	6089	6695	1180	1180	1180	0	0	0
GR	150	170	125	420	125	1300	130	2320	131	2570
GR	130	3892	130	4020	135	4440	136	4770	135	5070
GR	130	5230	125	5270	125	5320	148.66	5910	133	5950
GR	130	6000	122.8	6089	103.7	6140	106	6200	104.2	6600
GR	100.4	6650	101.7	6680	117.8	6695	139.6	6725	140.3	6865
GR	140.2	6855	140.2	7095	132	9000	130	9300	120	9700
GR	120	10000	128	10500	130	11076	150	11730		

	0.	0.	0.	0.	9.11	0.	0.	0.	4150	112
NH7.	0.12	7985.	0.035	8935.	0.12	9697.	0.038	10303.	0.175	
H12000.	0.12	14765.	0.12	15278.	0.	0.	0.	0.	0.	
	REVISED NH TO REFLECT EFFECTIVE FLOW AREA IN LEFT OVRBANK									
	5	10.0	7628	0.120	9697	0.038	10303.	.175	12000.	1
	14785.	1	15278.							
rob NH value revised to reflect ineffective flow area. -w-br										
right overland flow modeled for high e vents & smooth fwy										

	9	10.0	7985	.06	9558	0.120	9697	.038	10303.	.175
NL	12000	1	12196	.175	13352.	1	14785.	1	15278.	
RT			9 11		9 11	7.11	7628	12000	9590	11200

Cross Section 6.0
Cross Section E (HSM Draft)

X1	253400	77	9697	10303	2630	2630	2630		0	6178
GR	150.	3778	125.	4028	125	4908	130.	5928	131.	
GR	130	7200	130.	7628	134.25	7985.	135	8048.	136.	8378.
GR	135.	8678.	130.	8838.	125.	8878.	125.	8928.	125.06	8935.
GR	130.	9488.	133.	9558.	148.00	9590	123.5	9697.	104.4	9748.
GR	106.7	9808.	105.84	10000	104.9	10208.	101.1	10268.	102.4	10288.
GR	117.8	10303.	118.	10313.4	120.	10318.2	122.	10323.6	124.	10328.
GR	126.	10333.6	128.	10338.4	130.	10343.1	132.	10349.1	134.	10352.9
GR	136.	10357.4	138.	10361.5	140.	10372.3	138.	10865.2	138.	10930.9
GR	138.	11167.2	136.	11725.7	134.83	12000	134	12196	132.	12294.3
GR	130	12501.7	132.	12540.9	134.	12580.3	136.	12621.1	138.	12659.1
GR	140.	12718.9	140	12916	140.	13352	138.	13366.1	136.	13401.4
GR	134.	13475.6	134.	13679.1	136.	13774.5	136.	13872.4	136.	13897.8
GR	138	14035.3	140.	14121.4	142	14167.6	144	14215.3	144.	14434
GR	144	14504.2	144	14531.7	144	14785	144.	14787.	146.	14854.5
GR	148.	14921.7	150.	15000.	152.	15043.1	154.	15083.	154.	15184.6
GR	154.	15269.2	156.	15278.						
NC	0.11	0.11	0.035	0.1	0.30					
NH	10	0.12	2685.	0.11	4685	0.035	5260.	0.11	5400	0.
NH	5510	0.1	5550.	0.20	5650	0.11	5700.	0.20	5800	0.
NH	10700									

RT		9.11		9.11	9.41		5315	4685	5315
	9	10.0	3185	0.035	5260.	0.120	5320	0.024	6405
	7110	0.024	7840	0.120	8530	0.024	9000	0.120	10000
	11	10.0	3185	.028	5260.	0.120	5320	.6	6405
	7110	.6	7364	.2	7660	.2	7840	.2	8530
	9000	.2	10000						
NC	.07	.07	.038	.3	.5				
NH	13	10	3185	10	3800	.11	4685	.038	5315
NH	5335	.6	6405	1	7110	.6	7364	.2	7660
NH	7840	1	8530	1	9000	1	10000		

Cross Section 6.2

X1	254500	48	4685	5315	1050	1150	1100		
GR	180	2685	160	3185	140	3285	142	3800	145.4
GR	101.4	4785	105.9	4925	105.9	4985	104.1	5125	105.6
GR	103.3	5265	111.7	5300	127.2	5315	124.3	5335	124.9
GR	129.3	5385	140	5500	138	5880	138	5980	136
GR	134	6340	128	6373	134	6405	134	6580	136
GR	138	7054	140	7110	142	7170	142	7364	140
GR	138	7770	136	7840	136	8440	138	8485	140
GR	140	8700	138	8840	138	8905	140	8940	142

GR	144	9000	146	9060	148	9100	148	9185	146	9382
G	146	9882	148	9956	152	10000				
RT			9.11		9.4	9.41		5315	4685	5315
NH	13	10	3185	10	3800	.11	4685	.038	5315	.12
NH	5335	.6	6405	1	7110	.6	7364	.2	7660	.2
NH	7840	.2	8530	1	9000	1	10000			

Cross Section 6.5

X1	254600	0	0	0	100	100	100			
RT			9.11					5315	4685	5315
NH	8	10	2685	10	4685	.038	5315	.12	5710	.6
NH	6080	1	6900	.6	7400	.2	9875			

Cross Section 6.7

X1	255100	40	4685	5315	500	500	500	0	0	
GR	180	2685	160	3185	140	3285	145.15	4685	101.45	4785
GR	105.95	4925	105.95	4985	104.15	5125	105.65	5225	103.35	5265
GR	111.75	5300	127.25	5315	124.35	5335	124.85	5360	129.35	5385
GR	140	5710	138	5970	136	6080	134	6400	132	6420
GR	134	6490	134	6735	132	6900	136	6900	136	6930
GR	140	6970	142	7025	142	7210	141.6	7400	140	8260
GR	140	8430	138	8500	138	8550	140	8600	140	8640
GR	144	8705	146	8800	148	9585	150	9790	154	9875
ET			7.11			9.41	4685	5315		
NH	8	.07	4485	.18	4685	.038	5315	.12	5545	1
NH	6800	.6	7100	.175	7765	.2	8600			

Cross Section 7.0

Cross Section F (HSMM Draft)

A	256100	24	4685	5315	1000	1000	1000	0		
GR	180	2685	160	3185	140	3285	145.15	4685	101.45	4785
GP	105.95	4925	105.85	4985	104.15	5125	105.65	5225	103.35	5265
GR	111.75	5300	127.25	5315	124.35	5335	124.85	5360	129.35	5385
GR	135	5390	140	5545	140	6800	140	7100	140	7700
GR	138.8	7705	138.8	8400	150	8500	160	8600		
RT			9.11			7.41		5315	4685	5315
NH	4	.09	4685	.038	5315	.1	5545	1	8660	
X1	257200	0	0	0	1250	950	1100			
NC	.07	.07	.035	.1	.3					
NH	5	.07	6209	.035	6665	.07	6800	10	7900	10
NH	12600							6759	6192	6759
ET			9.11			5.41				

Cross Section 8.0
Cross Section G (HSMM Draft)

X1	258400	23	6209	6665	1150	1250	1200			
GR	180	1	160	4800	160	4950	151.7	6000	150.8	6023
GR	142.2	6042	143.5	6085	149.4	6090	132	6125	130.6	6170
GR	131.9	6175	124.7	6209	104.7	6260	101.4	6580	104.7	6610
GR	103.6	6620	105.7	6640	114.3	6665	120	6700	129.2	6800
GR	140	7900	160	9800	180	12600				
RT			9.11		9.1	5.41		6665	6209	6665
NH	5	.07	6209	.035	6665	.07	6800	10	7900	10
NH	12600									
X1	259600	0	0	0	1150	1250	1200			
RT			9.11		9.1	6.41		6665	6209	6665
NH	5	.07	6209	.035	6665	.07	6800	10	7900	10
NH	12600									
X1	260100	0	0	0	500	500	500			
NC	.065	.065	.03	.1	.3					
NH	5	.065	6000	.03	6689	.065	6705	10	6780	10
NH	9500									
RT			9.11		9.1	23.41		6689	4882	6689

Cross Section 9.0
Cross Section H (HSMM Draft)

X1	260400	22	6000	6689	300	300	300			
GR	180	1	160	1700	160	4000	140	4400	131.7	6000
GR	110.2	6030	103.5	6100	106.9	6200	106.7	6280	104.8	6320
GR	105.6	6340	105.2	6380	100.7	6460	106.9	6480	99.8	6530
GR	102.4	6600	108.3	6640	109.4	6660	120.6	6689	122.4	6705
GR	161.7	6780	180	9500						
NC	.065	.065	.03	.6	.8					
NH	3	1	1570	.03	2465	.065	3100			
RT			9.11		9.1	9.1		2465	1570	2465
X1	260500	18	1570	2465	100	100	100			
X3	10				0	0	0	165.5	165.5	
	5	350	166.1	0	880	166.1	0	1570	165.7	156.8
	2465	165.5	156.8	2900	167					
GR	170	1	166.1	350	140	435	135	585	135	785
GR	145	880	145	1320	140.5	1570	135.6	1640	105.7	1735
GR	107	1810	104.3	1925	107.2	2065	105.9	2230	112.5	2350
GR	140	2465	165	2900	170	3100				
SB	1.25	1.25	2.5	0	600	92	33973	3		
NH	3	1	1570	.03	2465	.065	3100			
ET			9.11		9.1	9.1		2465	1570	2465

X1	260550	0	0	0	50	50	50			
	0	0	1	156.8	165.5			165.5	165.5	156.8
X2	10									
BT	5	350	166.1	0	880	166.1	0	1570	165.7	
RT	2465	165.5	156.8	2900	167					
NC	.095	.095	.03	.1	.3			2465	1570	2465
ET			9.11		9.1	9.1				
NH	3	1	1570	.03	2465	.065	3100			
X1	260600	0	0	0	50	50	50	165.5	165.5	
X3	10									
ET			9.11		9.1	9.1		2730	1510	2730
NH	3	1	1510	.03	2730	.065	3590			
X1	260700	30	1000	2730	100	100	100	165.5	165.5	
X3	10									
GR	170	1	165	100	160	700	155	800	151	1000
GR	150	1050	130	1100	130	1170	170	1280	170	1380
GR	145	1510	126.1	1680	126.1	1681	127.5	1770	110	1800
GR	105.3	1042	107.4	2105	107.4	2115	104.6	2250	106	2265
GR	108.6	2410	103.7	2425	134	2570	123.1	2730	135	2850
GR	135	2980	155	2960	160	3120	160	3320	170	3570
NC	.065	.065	.03	.6	.8			2730	1510	2730
ET			9.11		9.1	9.11				
NH	3	1	1510	.03	2730	.065	3570			
X1	260730	0	0	0	30	30	30	170.9	170.9	
X3	10									
	11	1000	170.9	0	1380	172.9	0	1510	173.7	172.4
	1680	174.8	173.2	1681	174.9	166	2105	175	166	2115
	175	170.5	2250	175	170.5	2265	175	166	2730	175
	166	3570	175.3							
SR	1.25	1.25	2.5	0	670	122	50877	4.7		
	3	1	1510	.03	2730	.065	3570			
			9.11		9.1	9.11		2730	1510	2730
X1	260800	0	0	0	60	60	70			
X2	0	0	1	166	170.9					
X3	10							170.9	170.9	
BT	11	1000	170.9	0	1380	172.9	0	1510	173.7	172.4
RT	1680	174.8	173.2	1681	174.9	166	2105	175	166	2115
RT	175	170.5	2250	175	170.5	2265	175	166	2730	175
BT	166	3570	175.3							
NC	.065	.065	.03	.1	.3			1725.14	1548.77	1725.14
RT			9.11		9.11	9.41				

Cross Section 10.0
Cross Section I (BSMM Draft)

X	261200	25	370	1435	250	550	400			
GR	170	1	150	50	130	110	130	160	145	230
GR	145	300	140	370	133.4	500	128	520	131.8	570
GR	106.1	640	107.9	700	104	1100	105.5	1140	105.8	1240
GR	108.7	1280	127.6	1310	130	1385	135	1410	135	1435
GR	130	1455	125	1480	125	1730	150	1850	175	2050
ET			9.11		9.11	6.41			370	1700

Cross Section 11.0
Cross Section J (HSMM Draft)

X1	262900	0	0	0	1600	1800	1700	10	22	
ET			9.11		9.1	10.41			1660	3130

Cross Section 12.0
Cross Section K (HSMM Draft)

X1	264500	24	1660	3130	1750	1450	1600			
GR	175	1	170	140	165	250	160	900	155	1055
GR	150	1160	145	1200	137	1400	137	1659	137	1660
GR	140	1810	140	1890	138	1900	117	2005	108.5	2050
GR	110.8	2130	108.9	2490	111.5	2700	116.7	2830	130	2850
GR	143.6	3130	158.9	3165	159.2	3183	175	3210		
BT			9.11		9.1	10.41		3130	1660	3130
X1	264600	0	0	0	100	100	100	159.7	159.7	
X3	10							2190	162.5	155.4
BT	6	1	175	0	1660	160.5	153.4	175	0	
BT	3130	160.7	153.5	3165	160.7	158.9	3210			
SR	1.25	1.25	2.5	0	770	64.3	47517	8		
			9.11		9.1	12.41		3130	1660	3130
X2	264750		1	155.4	150	150	150			
X2					159.7			159.7	159.7	
X3	10							2490	162.5	155.4
BT	5	1	175	0	1660	160.5	153.4			
BT	3130	160.7	153.5	3210	175	0				
NC	.065	.065	.030	.1	.3	10.41		2285	709	2285
RT			9.11		9.1	25.41				

Cross Section 13.0
Cross Section L (HSMM Draft)

X1	265200	35	1220	2285	450	450	450			
GR	180	1	175	55	170	170	165	260	160	290
GR	155	310	150	340	145	360	140	415	135	440
GR	130	475	130	770	135	810	135	960	135	1100
GR	139.9	1200	139.9	1220	139.9	1270	130.7	1345	120	1353
GR	112.8	1380	110.5	1420	112.6	1490	111	1525	112.5	1545
GR	113.5	1575	113.8	1810	114.5	1850	112.4	1890	114.6	2075

	114.6	2110	115.6	2185	118.5	2208	135	2235	164.5	2285
GP	At USGS gage		channel measurements	from USGS	11-5-41	survey				
NC	065	065	030	1	3					
ET	0.	0.	9.11	0.	9.1	2.41	0.	5472	4303	5472
	12	364000	256000	272000	311000	303000	231000	142000	155000	135000
	214700	252900	356600							
OT	5	292000	292000	292000	292000	292000				
Y1	266750	72.	4595.	5471	1650	1450	1550		0.	
GR	175	3595	150	3725	150	3895	155	3915	160	3935
GR	160.	4000.	155.	4085.	150.	4105.	145.	4145.	145.	4455.
GR	145.	4575.	138.6	4595.						
GR	113.02	4710	111.12	4735	108.22	4660	118.22	4670	114.72	4690
GR	108.22	4835	110.02	4850	109.72	4760	109.72	4785	108.92	4810
GR	111.22	5035	112.22	5060	112.62	4910	110.72	4935	110.42	4960
GR	113.32	5160	112.62	5185	112.92	5095	112.62	5110	112.62	5135
GR	111.42	5310	110.62	5335	112.12	5210	112.72	5260	112.62	5285
GR	143	5471	144	5562.4	146	5591.7	148	5606.1	150	5614
GR	152.	5623.3	154.	5633.3	156.	5642.6	158.	5652.4	160.	5662.1
GR	162.	5670.6	162.	5712.6	160.	5778.4	158.	5889.3	158.	5963.1
GR	160.	6054	162.	6150.4	164	6225	166	6276.4	168	6347.4
GR	170	6397.3	172	6417.3	174	6447.7	176	6473.2	178	6497.9
GR	180.	6531.	182.	6548.3	184	6606.1	186.	6657.1	188.	6707.
GR	190.	6741.5	192.	6779.5	0.	0.	0.	0.	0.	0.

NC	065	065	0.030	1	3					
RT	0.	0.	9.11	0.	9.1	7.41	0.	5479.38	4300	5480

Cross Section 14.0
Cross Section M (HSMM Draft)

	266900	56	4595.	5405.	150	150	150	0.	0.	0.
GR	175	3595	150	3725	150	3895	155	3915	160	3935
GR	160.	4000.	155.	4085.	150.	4105.	145.	4145.	145.	4455.
GR	145.	4575.	138.6	4595.	118.3	4643.	107.	4815.	105.8	4870.
GR	110.1	4985	110.09	5000.	110	5095.	111.9	5205.	111.5	5300.
GR	113.3	5350	138	5368.2	140	5373.4	142.	5378.4	142.29	5405
GR	144.	5562.4	146.	5591.7	148.	5606.1	150.	5614.	152.	5623.3
GR	154.	5633.3	156.	5642.6	158.	5652.4	160.	5662.1	162.	5670.8
GR	162.	5712.6	160.	5778.4	158	5889.3	158	5963.1	160.	6054
GR	162	6150.4	164	6225	166	6276.4	168	6347.4	170	6397.3
GR	172.	6417.3	174.	6447.7	176.	6473.2	178.	6497.9	180.	6531.
GR	182.	6548.3	184.	6606.1	186.	6657.1	188.	6707.	190.	6741.5
GR	192.	6779.5	0.	0.	0.	0.	0.	0.	0.	0.

THE (-) WAS REMOVED FROM 1.06 FACTOR IN FIELD 8 DUE THAT THE PROGRAM WILL NOT RUN WITH A (-) VALUE IN THIS FIELD

200CT00

07:04:53

PAGE 24

	0.	0.	12.41	0.	9.41	12.41	0.	2231.3		0
X1	267400	13	775	2105	500	500	500	1.06	-3.6	945
GR	180	0	135	775	132.2	810	119.7	850	115.2	2240
GR	117	1400	118	2045	138.1	2105	146.5	2200	150	0
GR	160	2270	165	2330	175	2700	0	0	0	0

NC	0.095	0.095	0.03	0.30	0.50	0	0	0	0	0
RT	0.	0	9.11	0.	9.41	3.41	0.	5525	4475	5525

Cross Section 15.0
Cross Section N (HSMN Draft)

X1	267750	35	4475	5525	350	350	350	163.5	163.5	3815.
X2	10							3795.	160.	4335.
GR	175.	3475.	150.	3605.	150.	3775.	155.	4025.	145.	4750
GR	160.	3880.	155.	3965.	150.	3985.	145.	4695.	105.8	5180
GR	145	4455	138.6	4475.	118.3	4523.	107	5085	111.5	5775.3
GR	110.1	4865	110	4975	110.43	5000	111.9	5525.	152.	5860.6
GR	113.3	5230.	127.3	5272.	135.	5285.	150.	5811.8	162.	6199.4
GR	154.	5785.	156.	5793.8	158.	5803.3	160.	6118.2	172.	
GR	164	5938.6	166.	6063.5	168	6081.5	170			
SB	1.25	1.25	2.50	0	1240	120	54110	0	116	116
BT	0.		9.11	0	7.4	9.1	0	2000	563	2000
X1	267850	35	563	2000	100	100	100	0	0	0
X2	0	0	1.0	160	165	0	0	0	0.934	0
X3	10	0	0	0	0	0	0	163.5	163.5	0
BT	6	1	180	0	920	165	160	1400	167.3	160
BT	2060	165	160	2200	163.5	0	2700	175	0	0
GR	170.5	1	169.9	68	158.5	115	141.7	145	137.4	168
GR	135.3	195	135.3	225	136.7	265	138.8	245	152.8	320
GR	155.8	330	155.8	345	137.6	385	136	400	132	522
GR	132.5	525	131.0	532	130.0	563	121	575	119.1	592
GR	119.2	628	120.9	682	118	800	118.3	900	117.5	950
GR	118.5	1100	120.5	1200	118.8	1478	115.5	1580	115.2	1602
GR	115.5	1655	117.5	1715	116.0	1910	116.8	1875	119.0	1925
GR	122.7	1935	123.2	1950	129.5	2000	175.0	2400	0	0
	.065	.065	.03	0.1	0.3					
NC	.065	.065	.03	0.3	0.5					
NE	3	.095	1260	.03	5915	.095	6532.7	5915	4260	5915
BI	0.	0.	12.41	0.	9.1	12.41	0			

Cross Section 17 0
Cross Section P (HSMM Draft)

	268920	15.	4260.	5915.	1400.	800.	1070.	155.7	0.	
X1	10								0.	
X3	10								137.4	4083
GR	170.5	3915.	169.9	3983.	158.5	4030.	141.7	4060.	153.	4235.
GR	135.3	4110.	135.3	4140.	136.8	4180.	138.8	4210.	132.	4437.
GR	155.8	4245.	155.8	4260.	137.5	4300.	136.	4315.	119.6	4507.
GR	132.5	4440.	130.8	4447.	130.	4478.	121.2	4490.	118.5	4765.
GR	119.6	4543.	134.	4560.	120.9	4597.	118.	4715.	120.8	5115.
GR	117.5	4855.	119.8	4965.	118.59	5000.	118.5	5015.	140.4	5275.
GR	133.8	5137.	137.	5200.	147.	5237.	147.	5260.	115.1	5520.
GR	135.9	5315.	122.8	5390.	118.8	5393.	115.5	5495.	119.	5840.
GR	115.5	5565.	117.5	5630.	116.	5720.	116.8	5790.	132.	5988.2
GR	122.6	5850.	123.3	5965.	129.5	5915.	130.	5973.9	142.	6024.9
GR	134.	6002.9	136.	6013.2	138.	6017.9	140.	6021.2	152.	6041.1
GR	144.	6077.8	146.	6081.1	148.	6034.8	150.	6037.8	162.	6063.7
GR	154.	6044.9	156.	6049.	158.	6053.4	160.	6059.3	172.	6163.6
GR	164.	6068.2	166.	6072.9	168.	6081.2	170.	6126.6	178.	6332.7
GR	174.	6210.6	176.	6247.2	176.	6330.	176.	6353.3		

NC	095	095	095	03	3	5	not appropriate d bridge					
ET	095	095	095	9.11	9.1	9.1	12.41	0.	2248	600	2248	

Cross Section Q

	269250	96	600	2248	100	600	330			
X1	22	1	190.5	190.5	200	185	181.5	300	182.5	179
BT	422	180.2	174.5	520.0	178.5	172.5	600	177.6	171.6	661
RT	177	171	802	176	170	421	175.8	169.8	1021	175.8
BT	169.8	1161	175.8	169.8	1302	175.8	169.8	1661	175.5	170
BT	1802	175.2	170.5	1921	177.2	171.5	1987	178.5	174.8	2061
RT	179.9	176.0	2136	181.5	177.7	2211	183.0	179.4	2248	184
RT	180.4	2286	185	181.4	2366	187	187.0			
GR	190.5	1	188.2	70	153.5	116	183.6	116	183.2	126
GR	152.6	126	132.8	190	181.8	190	181.4	200	130.0	200
GR	129.2	252	133.0	300	179.0	300	178.8	310	143.5	310
GR	156.0	329	155.8	340	139.0	350	146.0	360	137.0	392
GR	134.0	412	174.5	412	174.4	422	133.0	422	131.2	458
GR	131.2	520	172.8	520	172.7	531	131.1	531	134.5	565
GR	134.0	600	123.8	661	171.0	661	171.0	671	123.0	671
GR	119.5	802	170.0	802	170.0	812	179.4	812	120.5	911
GR	170.0	911	169.8	921	120.0	921	120.1	1021	169.6	1021
GR	169.5	1031	120.5	1031	120.1	1161	169.5	1161	169.5	1171
GR	120.0	1171	121.5	1302	169.5	1302	169.5	1312	121.5	1312
GR	121.7	1340	137.8	1357	136.0	1411	169.5	1411	169.5	1421
GR	134.8	1421	123.8	1505	127.2	1520	169.5	1520	169.5	1530
GR	123.0	1530	121.0	1661	169.8	1661	169.8	1671	121.0	1671
GR	120.6	1802	170.1	1802	170.1	1812	171.0	1812	121.5	1911
GR	171.5	1911	171.5	1921	121.5	1921	120.8	1987	174.5	1992
GR	119.0	1997	122.0	2061	176.0	2061	176.2	2071	121.8	2071
GR	125.2	2136	177.6	2141	125.7	2146	131.5	2211	179.5	2216
GR	132.8	2221	135.8	2248	152.2	2286	181.4	2291	153.5	2296

GP 187.0

2366

BT	0.	0.	9.11	0.	9.1	12.41	0.	2248	600	2248
NC				3	5					
X1	269300	0	0	0	50	50	50	0	0	0
X2	0	0	0	0	0	0	1	0	0	0
BT	0.	0.	9.11	0.	9.1	12.41	0.	6165	3835	6165
	0	0	1	3	0	0	0	0	0	0
NC	0	0	0	3	5	0	0	0	0	0
NH	3	.095	3835	.03	6165	.095	6415	0	0	0

Cross Section 19.0

Cross Section R (HSMM Draft)

X1	270450	71	3835	6165	1200	1100	1150	158.3	0.	
X3	10.							0.		
GR	174.	3055.	170.	3145.	165.	3185.	160.	3365.	158.3	3655.
GR	148	3665.	144	3675.	138	3755.	150	3830.	158.2	3835.
GR	157	3850.	157.1	3863.	145	3890.	144.3	3920.	128	4035.
GR	127.5	4065.	125.	4155.	125.7	4255.	125.6	4360.	132.8	4410.
GR	133.6	4455.	126.5	4475.	126.5	4510.	132.4	4517.	132.4	4530.
GR	126	4545.	123.5	4605.	124	4745.	126.6	4797.	139	4875.
GR	142.5	4855.	129.4	4897.	124.5	4905.	124.5	4923.	125.7	4990.
GR	132.35	5000.	137.	5007.	137.2	5020.	142.8	5040.	142.2	5055.
GR	144.	5105.	140.	5120.	148.5	5147.	150.5	5230.	141.	5247.
GR	142	5255.	138.1	5283.	138.4	5301.	140.6	5310.	138.6	5340.
GR	138.5	5360.	128.5	5396.	124.1	5398.	125.5	5529.	132	5547.
GR	131.	5555.	132.5	5590.	127.	5605.	136.	5633.	136.1	5673.
GR	127.5	5729.	124.	5761.	122.8	5833.	115.6	5863.	128.	5969.2
GR	130	5985.9	132	6002.4	134	6049.2	136	6087.1	145.27	6165.
GR	175	6415.	0	0	0	0	0	0	0	0
NH	3	.095	2970	.03	5300	.095	5595	0	0	0
NC				3	.5					
BT			9.11		9.1	13.41		5300	2970	5300

Cross Section 20.0

Cross Section S (HSMM Draft)

Confluence of the Broad and Saluda Rivers
Upstream Limit of Detailed Study

X1	272010	89.	2970.	5300.	1560.	1560.	1560.	0.		
GR	175.	2190.1	171.	2280.	166.	2320.	161.	2500.	159.3	2740.
GR	149.	2800.	145.	2810.	139.	2890.	151.	2965.	159.2	2970.
GR	158.	2985.	158.1	2998.	146.	3025.	145.3	3055.	129.	3170.
GR	128.5	3200.	126.	3290.	126.7	3390.	127.6	3495.	133.8	3545.
GR	134.6	3590.	127.5	3608.	127.5	3645.	133.4	3652.	133.4	3665.
GR	127.	3680.	124.5	3740.	125.	3880.	127.6	3932.	140.	3960.
GR	143.5	3990.	130.4	4032.	125.5	4040.	125.5	4058.	126.7	4125.
GR	138.	4142.	138.2	4155.	143.8	4175.	143.2	4190.	145.	4240.
GR	141.	4255.	149.5	4282.	151.5	4365.	147.	4382.	143.	4390.

200CT00

07-04-53

PAGR 27

CP	139.1	4418.	139.4	4436.	141.6	4445.	139.6	4475.	139.5	4495.
C	129.5	4531.	125.1	4533.	126.5	4664.	133.	4682.	135.	4690.
GR	133.5	4725.	128.	4740.	137	4768	137 1	4808	128 5	4864
GR	125.	4896.	123 8	4968.	116 6	4998.	116 61	5000	117.	5108.
GR	116.1	5172.	122.	5235.	133.	5300.	132.	5320.	131.	5330.
GR	136.	5335.	138.	5345.	140.	5480.	142.	5495.	144.	5505.
GR	146.	5510.	148.	5515.	150.	5520.	152.	5530.	154.	5535.
GR	156.	5540.	158.	5545.	160.	5550.	162.	5560.	164.	5565.
GR	166.	5570.	168.	5580.	170.	5585.	171.	5595.	0.	0.

2000CT00

07:04:53

PAGE 28

T1 Richland and Lexington , SC FIS models
T2 Stream Name: Congaree River
T3 Floodway Qgage 292000 Set-2 equal conv

J1	ICHRCK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSRL	FQ
		6							128.19	
J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	MLDC	IBW	CHNIM	ITRACE
	2	0	-1							

THIS RUN EXECUTED 200CT00 07-07-26

HEC-2 WATER SURFACE PROFILES

Version 4.6.2; May 1991

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

100-year flood Q gage

SUMMARY PRINTOUT TABLE 110

SECNO	CWSRL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PRRNC	STENCL	STCHL	STCHR	STENCR
212950.000	127.24	-6.26	127.67	24283.63	173978.20	115986.40	8435.40	.00	.00	22200.00	22750.00	.00
212950.000	128.19	.95	128.66	13835.22	174405.30	121630.50	2364.28	.12	9139.38	22200.00	22750.00	22974.60
215700.000	128.82	.00	129.18	23170.54	174728.20	113348.70	10323.11	.00	.00	22200.00	22750.00	.00
215700.000	129.72	.90	130.04	14884.36	182243.20	111354.40	4802.45	.04	8030.57	22200.00	22750.00	22914.93
226700.000	131.79	.00	132.06	21948.70	60775.50	116157.40	121467.10	.00	.00	19665.00	20334.00	.00
226700.000	132.44	.65	132.75	14155.75	56014.16	121631.20	120754.70	.09	10452.84	19665.00	20334.00	24758.76
234100.000	133.89	.00	134.32	25282.92	67637.71	172034.80	58727.46	.00	.00	19585.00	20415.00	.00
234100.000	134.64	.75	135.18	16386.58	67079.16	138561.60	42759.24	17106.00	5550.00	19585.00	20415.00	22656.00
238900.000	135.29	.00	135.54	23928.12	101799.10	146683.40	49917.54	.00	.00	29870.00	30700.00	.00
238900.000	136.22	.94	136.52	15937.73	97521.06	157397.50	43481.48	16065.00	19835.00	29870.00	30700.00	35900.00
239370.000	135.37	.00	135.66	23931.56	96629.76	154043.10	47727.12	.00	.00	29870.00	30700.00	.00
239370.000	136.30	.93	136.65	14613.38	92125.52	166097.40	40177.12	14740.00	21160.00	29870.00	30700.00	35900.00
239800.000	135.41	.00	135.82	19141.40	74223.35	170312.10	53864.52	.00	.00	9575.00	10425.00	.00
239800.000	136.39	.98	136.78	15050.72	71249.30	170731.00	56419.74	15140.00	560.00	9575.00	10425.00	15700.00
241500.000	135.82	.00	136.32	23311.41	57543.82	190375.80	50480.38	.00	.00	12275.00	13125.00	.00
241500.000	136.73	.91	137.28	12253.06	52704.43	200941.40	44754.18	.09	6333.63	12275.00	13125.00	18696.50
241850.000	135.91	.00	136.41	23162.56	60073.79	191129.70	47196.51	.00	.00	12275.00	13125.00	.00
241850.000	136.82	.91	137.38	12418.91	55574.80	201713.30	41111.94	.08	6193.04	12275.00	13125.00	18870.63
242049.000	136.13	.00	136.50	14595.06	33357.87	140127.40	124914.70	.00	.00	10815.00	12065.00	.00
242049.000	137.08	.94	137.48	8615.55	27059.48	143794.70	127546.80	11700.00	5540.00	10815.00	12065.00	17240.00
242050.000	136.13	.00	136.51	6270.99	33949.19	141553.90	122896.90	.00	.00	10815.00	12065.00	.00
242050.000	137.08	.95	137.48	4798.54	24593.51	144179.80	124426.70	11700.00	5540.00	10815.00	12065.00	17240.00

SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
242120.000	136.15	.00	136.53	6271.70	33959.89	141466.70	122973.40	.00	.00	10815.00	12065.00	.00
242120.000	137.10	.95	137.50	4799.33	29610.03	144262.80	124527.20	11700.00	5540.00	10815.00	12065.00	17240.00
242121.000	136.15	.00	136.53	14592.66	33968.47	141446.70	122984.80	.00	.00	10815.00	12065.00	.00
242121.000	137.11	.96	137.50	9615.98	30873.16	143607.40	123919.40	11700.00	5540.00	10815.00	12065.00	17240.00
242169.000	136.19	.00	136.55	14593.29	36909.49	139708.50	121782.00	.00	.00	10793.00	12065.00	.00
242169.000	137.15	.96	137.52	8616.06	34147.75	141633.40	122618.90	11700.00	5540.00	10793.00	12065.00	17240.00
242170.000	136.18	.00	136.55	6272.43	33990.26	141232.30	123177.50	.00	.00	10793.00	12065.00	.00
242170.000	137.13	.95	137.53	4799.43	29632.59	144086.40	124681.00	11700.00	5540.00	10793.00	12065.00	17240.00
242240.000	136.20	.00	136.58	6174.10	34046.51	141287.00	123066.50	.00	.00	10806.00	12065.00	.00
242240.000	137.16	.96	137.55	4808.18	29659.28	143940.90	124799.80	11700.00	5540.00	10806.00	12065.00	17240.00
242241.000	136.18	.00	136.60	14599.62	23013.89	147098.20	128287.90	.00	.00	10806.00	12065.00	.00
242241.000	137.14	.96	137.57	8624.06	20801.01	148746.60	128852.40	11700.00	5540.00	10806.00	12065.00	17240.00
242440.000	136.30	.00	136.68	23040.98	80729.44	144257.50	55413.08	.00	.00	11900.00	12825.00	.00
242440.000	137.24	.94	137.64	12009.69	82918.25	170880.20	44601.54	12060.00	5540.00	11900.00	12825.00	17600.00
243000.000	136.61	.00	136.86	22909.76	97198.05	138627.30	62574.68	.00	.00	12000.00	12825.00	.00
243000.000	137.48	.87	137.83	10892.32	90817.09	155085.50	52497.38	.14	6450.38	12000.00	12825.00	17868.48
245600.000	137.25	.00	137.43	23011.18	137173.20	113245.50	47579.36	.00	.00	12000.00	12825.00	.00
245600.000	138.25	.96	138.39	11268.03	143487.10	112775.80	42137.13	11720.00	5580.00	12000.00	12825.00	17300.00
246000.000	137.35	.00	137.46	23052.53	141757.70	103747.50	52894.97	.00	.00	12000.00	12825.00	.00
246000.000	138.28	.93	138.42	11158.09	142644.70	112109.70	43445.62	.11	5586.51	12000.00	12825.00	17159.18
246700.000	137.47	.00	137.57	20951.27	173720.80	92323.02	26356.22	.00	.00	14587.00	15413.00	.00
246700.000	138.37	.93	138.56	9816.95	160658.50	113960.30	23781.19	9900.00	8900.00	14587.00	15413.00	18800.00
247000.000	137.41	.00	137.68	19910.99	110056.50	142640.30	45703.19	.00	.00	18900.00	19725.00	.00
247000.000	138.36	.95	138.67	10533.17	111045.50	151286.80	36067.73	.11	12723.08	18900.00	19725.00	23280.78
247200.000	137.43	.00	137.74	18239.37	114540.60	143393.20	36464.21	.00	.00	16900.00	19725.00	.00
247200.000	138.43	.98	138.72	10845.95	117845.70	149060.60	31493.74	.08	12436.90	18900.00	19725.00	23305.72
248200.000	137.70	.00	138.01	14484.24	114862.30	137056.70	46481.05	.00	.00	13000.00	13676.00	.00
248200.000	138.68	.98	138.97	11179.75	120224.00	134243.00	43933.00	.03	6336.94	13000.00	13676.00	17584.46
249300.000	138.08	.00	138.27	11057.95	95577.69	109595.80	93422.45	.00	.00	9662.00	10338.00	.00
249300.000	138.97	.88	139.23	9740.00	89606.09	126334.00	82459.89	.18	4219.32	9662.00	10338.00	13996.07
249590.000	138.03	.00	138.40	14769.35	99959.59	142885.20	55555.16	.00	.00	13000.00	13676.00	.00
249590.000	138.92	.89	139.37	9571.98	99469.99	154650.20	44259.81	.12	7575.04	13000.00	13676.00	17269.03
250770.000	136.20	.00	139.02	9932.43	76947.26	162759.60	39693.23	.00	.00	6089.00	6695.00	.00
250770.000	139.11	.91	140.01	7719.65	76376.80	191162.70	30910.51	.09	1618.87	6089.00	6695.00	10725.15

SECNO	CWSRL	DIFKWS	EG	TOPWID	QLOB	QCH	QFOB	PERENC	STENCL	STCHL	STCHR	STENCH
253400.000	139.24	.00	141.25	9293.82	42817.63	245354.40	6227.96	.00	.00	9697.00	10303.00	.00
253400.000	140.21	.97	142.08	4321.34	47093.35	247625.40	3681.27	4372.00	7628.00	9697.00	10303.00	12000.00
254500.000	139.85	.00	143.20	3463.26	.00	295553.20	2846.80	.00	.00	4685.00	5315.00	.00
254500.000	140.69	.84	143.97	619.30	.00	298400.00	.00	.01	4685.00	4685.00	5315.00	5315.00
254600.000	140.14	.00	143.38	3756.36	.00	293884.10	4535.92	.00	.00	4685.00	5315.00	.00
254600.000	140.88	.74	144.12	619.72	.00	298400.00	.00	.02	4685.00	4685.00	5315.00	5315.00
255100.000	141.15	.00	144.11	3587.93	.62	290748.20	7651.22	.00	.00	4685.00	5315.00	.00
255100.000	141.72	.59	144.81	621.53	.00	298400.00	.00	.03	4685.00	4685.00	5315.00	5315.00
256100.000	142.62	.00	145.32	4467.95	766.06	290627.60	6986.35	.00	.00	4685.00	5315.00	.00
256100.000	143.24	.87	146.07	625.64	.00	298400.00	.00	.03	4685.00	4685.00	5315.00	5315.00
257200.000	144.02	.00	146.49	4871.30	1793.50	289479.30	7187.18	.00	.00	4685.00	5315.00	.00
257200.000	144.63	.61	147.25	632.34	.00	298342.50	57.45	.04	4685.00	4685.00	5315.00	5315.52
258400.000	144.51	.00	147.91	2277.99	5178.10	277355.60	15865.26	.00	.00	6209.00	6665.00	.00
258400.000	145.35	.64	148.66	601.58	7405.50	282863.40	17047.05	.02	6172.58	6209.00	6665.00	6774.17
259600.000	145.92	.00	149.05	2418.51	5831.92	276230.40	16337.66	.00	.00	6209.00	6665.00	.00
259600.000	146.54	.62	149.77	612.41	3082.73	281578.90	13818.38	.02	6166.38	6209.00	6665.00	6778.79
260100.000	146.44	.00	149.46	2471.16	6082.25	275237.00	16379.46	.00	.00	6209.00	6665.00	.00
260100.000	147.03	.59	150.20	605.72	3076.41	281862.40	13611.15	.03	6160.50	6209.00	6665.00	6772.82
* 260400.000	148.75	.00	149.79	2530.30	38647.17	258437.00	1327.92	.00	.00	6000.00	6689.00	.00
* 260400.000	149.17	.12	150.51	1082.18	15107.65	283292.30	.00	.11	5606.82	6000.00	6689.00	6689.00
260500.000	148.71	.00	150.08	895.00	.00	298400.00	.00	.00	.00	1570.00	2465.00	.00
260500.000	149.72	.51	150.55	895.00	.00	298400.00	.00	.895.00	1570.00	1570.00	2465.00	2465.00
260550.000	149.13	.00	150.47	895.00	.00	298400.00	.00	.00	.00	1570.00	2465.00	.00
260550.000	149.62	.49	150.92	895.00	.00	298400.00	.00	.895.00	1570.00	1570.00	2465.00	2465.00
260600.000	149.13	.00	150.48	895.00	.00	298400.00	.00	.00	.00	1570.00	2465.00	.00
260600.000	149.64	.49	150.94	895.00	.00	298400.00	.00	.895.00	1570.00	1570.00	2465.00	2465.00
260700.000	149.80	.00	150.56	1418.97	.00	298400.00	.00	.00	.00	1000.00	2730.00	.00
260700.000	150.17	.36	151.01	1220.00	.00	298400.00	.00	.1220.00	1510.00	1000.00	2730.00	2730.00
260750.000	149.81	.00	150.57	1419.04	.00	298400.00	.00	.00	.00	1000.00	2730.00	.00
260750.000	150.18	.36	151.01	1220.00	.00	298400.00	.00	.1220.00	1510.00	1000.00	2730.00	2730.00
260800.000	150.04	.00	150.78	1422.89	.00	298400.00	.00	.00	.00	1000.00	2730.00	.00
260800.000	150.42	.39	151.25	1220.00	.00	298400.00	.00	.1220.00	1510.00	1000.00	2730.00	2730.00
261200.000	150.10	.00	150.67	1691.13	3769.64	270611.10	22019.26	.00	.00	370.00	1445.00	.00
261200.000	150.49	.39	151.34	1315.00	.00	287257.10	16146.90	.04	470.00	470.00	1445.00	1585.00

SEONO	CWSEL	DIPKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STOHL	STOHR	STENCR
262300.000	150.40	.00	151.21	1463.93	4663.93	212442.00	21031.44	.00	.00	370.00	1433.00	.00
262400.000	150.82	.42	151.75	1488.26	349.22	280823.20	17177.63	.03	122.30	170.00	1435.00	1710.56
264500.000	150.97	.00	151.64	1005.24	10001.77	288152.60	45.65	.00	.00	1660.00	3130.00	.00
264500.000	151.41	.41	152.13	1470.00	.00	298400.00	.00	.04	1660.00	1660.00	3130.00	3130.00
264600.000	150.94	.00	151.07	1470.00	.00	298400.00	.00	.00	.00	1660.00	3130.00	.00
264600.000	151.43	.43	152.15	1470.00	.00	298400.00	.00	.00	1660.00	1660.00	3130.00	3130.00
264750.000	151.03	.00	151.77	1470.00	.00	298400.00	.00	.00	.00	1660.00	3130.00	.00
264750.000	151.52	.49	152.24	1470.00	.00	298400.00	.00	.00	1660.00	1660.00	3130.00	3130.00
265200.000	151.03	.00	151.03	1426.79	33363.30	269434.30	.00	.00	.00	1220.00	2283.00	.00
265200.000	151.45	.25	152.46	1087.96	900.92	297499.10	.00	.12	1174.75	1220.00	2285.00	2285.00
266750.000	151.70	.00	152.38	1700.41	1939.81	286744.10	1336.32	.00	.00	4595.00	5471.00	.00
266750.000	151.72	.52	152.90	1184.61	2874.03	289126.00	.00	.01	4286.39	4595.00	5471.00	5471.00
266900.000	151.14	.00	152.47	1099.33	3712.13	263700.30	2161.02	.00	.00	4595.00	5405.00	.00
266900.000	151.62	.48	153.00	870.00	.00	297000.00	.00	.02	4595.00	4595.00	5405.00	5405.00
* 267400.000	152.19	.00	152.63	1950.87	4160.49	285878.90	2001.60	.00	.00	821.50	2231.30	.00
* 267400.000	152.71	.52	153.17	1409.80	.00	292000.00	.00	.02	821.50	821.50	2231.30	2231.30
* 267750.000	151.90	.00	153.03	1050.00	.00	292000.00	.00	.00	.00	4475.00	5525.00	.00
* 267750.000	152.45	.55	153.54	1050.00	.00	292000.00	.00	.00	4475.00	4475.00	5525.00	5525.00
* 267850.000	151.00	.00	153.03	1437.00	.00	292000.00	.00	.00	.00	563.00	2000.00	.00
* 267850.000	152.45	.55	153.54	1437.00	.00	292000.00	.00	1437.00	563.00	563.00	2000.00	2000.00
268920.000	152.04	.00	153.20	1773.31	.00	288370.40	3023.03	.00	.00	4260.00	5915.00	.00
268920.000	153.15	.51	153.73	1649.70	.00	297000.00	.00	.01	4260.00	4260.00	5915.00	5915.00
269250.000	152.10	.00	153.09	1966.77	11572.91	280054.40	172.16	.00	.00	600.00	2248.00	.00
* 269250.000	153.18	.48	153.83	1513.85	.00	292000.00	.00	.01	600.00	600.00	2248.00	2248.00
269300.000	152.12	.00	153.31	1906.63	11360.33	280040.40	373.24	.00	.00	600.00	2248.00	.00
269300.000	153.20	.49	153.85	1513.85	.00	292000.00	.00	.04	600.00	600.00	2248.00	2248.00
270450.000	153.11	.00	153.64	2350.91	.00	291848.00	157.95	.00	.00	3835.00	6165.00	.00
270450.000	153.69	.59	154.20	2294.40	.00	292000.00	.00	.00	3835.00	3835.00	6165.00	6165.00
272010.000	153.03	.00	153.39	2030.03	1037.08	289932.80	4310.10	.00	.00	2970.00	5300.00	.00
272010.000	154.06	.52	154.50	2792.98	.00	297000.00	.00	.02	2970.00	2970.00	5300.00	5300.00

100-year flood Q gage

SUMMARY PRINTOUT TABLE 100

STATION	WATER	DEPTH	WIND	WIND	Q	WIND	WIND	WIND	WIND	WIND	WIND	WIND
STATION	WATER	DEPTH	WIND	WIND	Q	WIND	WIND	WIND	WIND	WIND	WIND	WIND
212950.000	.00	.00	.00	.00	92.30 298400.00	127.24	.00	127.67	6.70	8.44 227612.30119870.50		
212950.000	.00	.00	.00	.00	92.30 298400.00	128.19	.00	128.66	6.03	8.43 140829.50121540.30		
213700.000	2750.00	.00	.00	.00	92.30 298400.00	128.04	.00	128.16	6.69	7.66 229717.60133030.10		
214700.000	2750.00	.00	.00	.00	92.30 298400.00	129.72	.00	130.04	6.18	7.30 166418.10144905.00		
226700.000	11000.00	.00	.00	.00	95.60 298400.00	137.70	.00	137.06	3.77	6.26 177032.80165137.50		
226700.000	11000.00	.00	.00	.00	95.60 298400.00	132.44	.00	132.75	3.31	6.50 134050.90164070.30		
234100.000	7400.00	.00	.00	.00	100.10 298400.00	133.83	.00	134.32	3.41	6.31 243002.20161347.50		
234100.000	7400.00	.00	.00	.00	100.10 298400.00	134.64	.00	135.18	3.78	7.39 150827.10153548.70		
238900.000	4800.00	.00	.00	.00	100.10 298400.00	135.24	.00	135.54	2.77	5.70 265677.10100771.00		
238900.000	4800.00	.00	.00	.00	100.10 298400.00	136.22	.00	136.52	2.32	5.94 200703.30196119.60		
239370.000	470.00	.00	.00	.00	100.15 298400.00	133.37	.00	133.66	2.44	5.36 266459.30191030.10		
239370.000	470.00	.00	.00	.00	100.15 298400.00	136.70	.00	136.55	2.57	5.26 188117.70186177.60		
239800.000	430.00	.00	.00	.00	100.00 298400.00	135.41	.00	135.87	3.29	5.75 187646.80164677.70		
239800.000	430.00	.00	.00	.00	100.00 298400.00	136.39	.00	136.78	2.96	6.55 197308.30173466.00		
241300.000	1700.00	.00	.00	.00	100.00 298400.00	136.84	.00	136.32	2.68	7.06 243913.30162961.10		
241300.000	1700.00	.00	.00	.00	100.00 298400.00	136.73	.00	137.28	2.70	7.26 147980.40187639.50		
241850.000	350.00	.00	.00	.00	100.00 298400.00	135.91	.00	136.41	2.65	7.04 247482.40187044.10		
241850.000	350.00	.00	.00	.00	100.00 298400.00	136.82	.00	137.38	2.70	7.27 154339.60181725.60		
242049.000	173.00	.00	.00	.00	100.00 298400.00	136.13	.00	136.30	3.04	6.19 170929.60171131.70		
242049.000	173.00	.00	.00	.00	100.00 298400.00	137.08	.00	137.48	2.91	6.10 121471.50175070.00		
242050.000	1.00	145.00	152.00	100.00 298400.00	136.73	.00	136.57	2.88	6.26 83742.86175467.00			
242050.000	1.00	145.00	152.00	100.00 298400.00	137.08	.00	137.48	2.71	6.13 74695.64181251.90			
242120.000	70.00	145.00	152.00	100.00 298400.00	136.13	.00	136.33	2.68	6.26 63200.44173737.40			
242120.000	70.00	145.00	152.00	100.00 298400.00	137.10	.00	137.50	2.70	6.17 74813.92187661.80			
242171.000	1.00	.00	.00	100.00 298400.00	136.15	.00	136.54	2.88	6.26 170609.30175771.60			
242171.000	1.00	.00	.00	100.00 298400.00	137.11	.00	137.50	2.66	6.09 118836.50182437.00			
242169.000	49.00	.00	.00	100.00 298400.00	136.13	.00	136.33	2.61	6.16 170936.70176100.10			
242169.000	49.00	.00	.00	100.00 298400.00	137.15	.00	137.52	2.59	5.99 119202.00185284.70			
242170.000	1.00	145.00	152.00	100.00 298400.00	136.78	.00	136.55	2.87	6.23 83477.91176271.80			
242170.000	1.00	145.00	152.00	100.00 298400.00	137.13	.00	137.53	2.69	6.10 74949.41182047.60			
242240.000	70.00	145.00	152.00	100.00 298400.00	136.20	.00	136.36	2.67	6.22 62193.40176242.00			
242240.000	70.00	145.00	152.00	100.00 298400.00	137.16	.00	137.55	2.68	6.08 75081.59187375.90			

SECNO	XLCH	ELTFD	ELLC	ELMIN	Q	CMSDL	CRIMS	EG	10*KS	VCH	AREA	91K
242241.000	1.00	.00	.00	100.00	298400.00	136.16	.00	136.60	3.12	6.43	166314.60	163010.40
242241.000	1.00	.00	.00	100.00	298400.00	137.14	.00	137.57	2.86	6.24	119740.40	107647.10
242440.000	199.00	.00	.00	100.40	298400.00	136.30	.00	136.68	3.64	6.62	213724.80	18756505.40
242440.000	199.00	.00	.00	100.40	298400.00	137.24	.00	137.64	3.51	6.66	157317.80	159317.60
243000.000	560.00	.00	.00	101.50	298400.00	136.01	.00	136.60	2.65	5.63	243031.60	163361.00
243000.000	560.00	.00	.00	101.50	298400.00	137.48	.00	137.83	3.00	6.39	117864.40	1077271.60
245800.000	2800.00	.00	.00	101.50	298400.00	137.79	.00	137.44	1.64	4.10	261444.40	213112.10
245800.000	2800.00	.00	.00	101.50	298400.00	138.25	.00	138.39	1.45	4.53	159287.80	247439.10
246000.000	700.00	.00	.00	101.50	298400.00	137.35	.00	137.46	1.36	4.23	263442.00	23362.50
246000.000	700.00	.00	.00	101.50	298400.00	138.78	.00	138.47	1.44	4.50	158111.20	149756.10
246700.000	700.00	.00	.00	101.50	298400.00	137.47	.00	137.57	1.68	4.22	226139.00	210294.70
246700.000	700.00	.00	.00	101.50	298400.00	138.37	.00	138.56	2.28	5.04	128050.70	197552.50
247000.000	300.00	.00	.00	101.50	298400.00	137.61	.00	137.68	2.00	3.65	172216.60	166021.10
247000.000	300.00	.00	.00	101.50	298400.00	138.36	.00	138.67	2.50	6.05	117475.60	185489.70
247200.000	200.00	.00	.00	101.50	298400.00	137.45	.00	137.74	2.64	6.00	161244.40	181554.60
247200.000	200.00	.00	.00	101.50	298400.00	138.43	.00	138.72	2.49	5.95	119540.20	168947.00
248200.000	1000.00	.00	.00	102.50	298400.00	137.70	.00	136.01	2.76	6.44	154736.10	117130.10
248200.000	1000.00	.00	.00	102.50	298400.00	138.68	.00	138.97	2.49	6.12	132884.00	194011.90
249100.000	1100.00	.00	.00	103.60	298400.00	138.08	.00	138.27	1.90	5.22	128872.30	216543.10
249100.000	1100.00	.00	.00	103.60	298400.00	138.97	.00	139.23	2.30	5.90	111558.60	196921.50
249300.000	290.00	.00	.00	103.60	298400.00	136.03	.00	136.40	3.26	6.03	160331.40	163365.30
249300.000	290.00	.00	.00	103.60	298400.00	138.02	.00	139.17	3.47	7.24	110936.80	160709.00
250770.000	1180.00	.00	.00	100.40	298400.00	138.20	.00	139.07	5.47	9.21	97342.90	128144.80
250770.000	1180.00	.00	.00	100.40	298400.00	139.11	.00	140.01	5.42	9.38	77837.55	128316.30
253400.000	2630.00	.00	.00	101.10	298400.00	137.24	.00	141.23	9.74	12.44	66161.13	33629.33
253400.000	2630.00	.00	.00	101.10	298400.00	140.21	.00	142.08	8.72	12.00	42944.35	101842.50
254500.000	1100.00	.00	.00	101.40	298400.00	139.85	.00	143.70	14.26	14.76	30048.63	74010.82
254500.000	1100.00	.00	.00	101.40	298400.00	140.69	.00	143.97	13.78	14.53	28539.61	60390.73
254600.000	100.00	.00	.00	101.40	298400.00	140.14	.00	143.38	13.70	14.33	31032.33	60611.50
254600.000	100.00	.00	.00	101.40	298400.00	140.88	.00	144.12	13.55	14.45	28652.52	81075.76
255100.000	500.00	.00	.00	101.45	298400.00	141.15	.00	144.11	12.24	13.98	32058.02	85293.52
255100.000	500.00	.00	.00	101.45	298400.00	141.72	.00	144.61	12.59	14.11	21147.87	84102.81
256100.000	1000.00	.00	.00	101.45	298400.00	142.62	.00	145.32	10.63	13.36	33011.91	31421.41
256100.000	1000.00	.00	.00	101.45	298400.00	143.24	.00	146.07	10.97	13.49	22110.28	90091.51

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSBL	CRWS	EG	10*KS	VCH	AREA	.01K
257200.000	1100.00	.00	.00	101.43	298400.00	144.02	.00	146.49	9.33	12.60	33609.31	97707.31
257200.000	1100.00	.00	.00	101.45	298400.00	144.63	.00	147.25	9.40	12.98	33052.33	97345.73
258400.000	1200.00	.00	.00	101.40	298400.00	144.51	.00	147.91	9.80	15.34	34369.04	97331.73
258400.000	1200.00	.00	.00	101.40	298400.00	145.15	.00	148.66	9.64	15.38	31589.51	96084.39
259600.000	1200.00	.00	.00	101.40	298400.00	145.34	.00	148.93	8.94	14.74	31660.66	96101313.60
259600.000	1200.00	.00	.00	101.40	298400.00	146.54	.00	149.77	8.54	14.80	27617.70	96102173.90
260100.000	500.00	.00	.00	101.40	298400.00	146.44	.00	149.48	8.25	14.54	48942.44	96104876.40
260100.000	500.00	.00	.00	101.40	298400.00	147.03	.00	150.20	8.33	14.65	22778.96	96104027.60
260400.000	300.00	.00	.00	99.80	298400.00	146.73	.00	149.73	2.14	6.77	51269.36	96104000.10
260400.000	300.00	.00	.00	99.80	298400.00	149.17	.00	150.51	2.62	9.51	36251.11	96104000.50
260500.000	100.00	.00	.00	104.30	298400.00	148.71	.00	150.08	3.10	9.48	41826.65	96104071.70
260500.000	100.00	.00	.00	104.30	298400.00	149.22	.00	150.55	3.00	9.21	32287.28	96123366.50
260550.000	50.00	163.30	156.80	104.30	298400.00	149.13	.00	150.47	2.98	8.27	32204.30	96124193.60
260550.000	50.00	165.50	156.80	104.30	298400.00	149.64	.00	150.92	2.89	9.14	32642.61	96125488.90
260600.000	50.00	.00	.00	104.30	298400.00	149.15	.00	150.48	2.98	9.26	32217.98	96125111.60
260600.000	50.00	.00	.00	104.30	298400.00	149.64	.00	150.93	2.89	9.14	32655.79	96125605.10
260700.000	100.00	.00	.00	103.70	298400.00	149.80	.00	150.36	2.14	6.99	41664.44	96125605.60
260700.000	100.00	.00	.00	103.70	298400.00	150.77	.00	151.01	2.14	7.44	40647.45	96125614.10
260730.000	30.00	.00	.00	103.70	298400.00	149.87	.00	150.57	2.14	6.99	41664.45	96125614.30
260730.000	30.00	.00	.00	103.70	298400.00	150.18	.00	151.01	2.14	7.34	40661.23	96125615.00
260800.000	70.00	170.30	166.00	103.70	298400.00	150.03	.00	150.78	2.10	6.94	43007.22	96125615.70
260800.000	70.00	170.90	166.00	103.70	298400.00	150.42	.00	151.25	2.09	7.28	40962.56	96125617.90
261200.000	400.00	.00	.00	104.00	298400.00	150.18	.00	150.87	1.96	7.34	49017.26	96125694.40
261200.000	400.00	.00	.00	104.00	298400.00	150.49	.00	151.31	2.09	7.56	43503.31	96125624.00
261500.000	1700.00	.00	.00	106.10	298400.00	150.60	.00	151.27	2.44	7.61	43563.26	96125625.60
261500.000	1700.00	.00	.00	106.10	298400.00	150.82	.00	151.75	2.45	7.95	41961.34	96125637.60
261500.000	1600.00	.00	.00	106.50	298400.00	150.97	.00	151.64	2.04	6.70	48867.46	96125672.00
261500.000	1600.00	.00	.00	106.50	298400.00	151.41	.00	152.13	2.12	6.83	43679.18	96125621.00
264600.000	100.00	160.30	155.40	108.50	298400.00	151.34	.00	151.85	2.19	6.94	42588.39	96125647.50
264600.000	100.00	160.50	155.40	108.50	298400.00	151.43	.00	152.15	2.09	6.81	43709.10	961256177.90
264750.000	150.00	159.70	155.40	108.50	298400.00	151.04	.00	151.77	2.17	6.92	41170.64	961256474.90
264750.000	150.00	159.70	155.40	108.50	298400.00	151.52	.00	152.24	2.06	6.81	43837.74	961256123.10
265200.000	450.00	.00	.00	110.50	298400.00	151.09	.00	151.89	2.21	7.08	43660.10	961256421.60
265200.000	450.00	.00	.00	110.50	298400.00	151.15	.00	152.46	2.74	8.46	45711.17	96125620.90

SECNO	XLCH	ELTED	ELLC	ELMIN	Q	CWSL	CRWS	EG	10*KS	VCH	AREA	.01E
266750.000	1550.00	.00	.00	108.22	292000.00	152.20	.00	152.36	2.72	8.81	36744.70177000.36	
266750.000	1550.00	.00	.00	108.22	292000.00	151.72	.00	152.40	2.67	8.76	45155.71178468.60	
266900.000	150.00	.00	.00	105.80	292000.00	151.14	.00	152.47	2.89	9.35	35770.91171672.60	
266900.000	150.00	.00	.00	105.80	292000.00	151.62	.00	153.00	3.00	9.43	30967.43150566.30	
* 267400.000	500.00	.00	.00	111.60	292000.00	152.19	.00	152.63	.94	5.39	55714.123000631.40	
* 267400.000	500.00	.00	.00	111.60	292000.00	152.71	.00	153.17	.98	5.43	55774.96295655.10	
* 267750.000	350.00	.00	.00	105.80	292000.00	151.90	.00	153.03	2.89	8.54	44181.12171676.30	
* 267750.000	350.00	.00	.00	105.80	292000.00	152.45	.00	153.54	2.74	8.40	34765.19176248.50	
* 267850.000	100.00	165.00	160.00	115.20	292000.00	151.50	.00	153.03	1.40	6.07	46144.30194102.60	
* 267850.000	100.00	165.00	160.00	115.20	292000.00	152.45	.00	153.54	1.35	5.97	48886.70251062.10	
268070.000	1070.00	.00	.00	115.10	292000.00	152.64	.00	153.20	1.71	6.05	50051.74224208.90	
268070.000	1070.00	.00	.00	115.10	292000.00	153.15	.00	153.71	1.69	6.02	46225.96224928.70	
269250.000	330.00	175.20	180.40	119.00	292000.00	152.40	.00	153.19	3.25	6.18	51140.02162872.80	
* 269250.000	330.00	175.20	180.40	119.00	292000.00	153.18	.00	153.83	3.44	6.44	45329.28157356.40	
269300.000	50.00	175.20	180.40	119.00	292000.00	152.72	.00	153.71	3.25	6.78	72150.13162016.70	
269300.000	50.00	175.20	180.40	119.00	292000.00	153.20	.00	153.85	3.44	6.44	45353.27157473.40	
270450.000	1150.00	.00	.00	115.50	292000.00	153.11	.00	153.64	2.32	5.84	50267.96151935.00	
270450.000	1150.00	.00	.00	115.50	292000.00	153.59	.00	154.20	2.14	5.68	51474.40199681.00	
272070.000	1560.00	.00	.00	116.10	292000.00	153.53	.00	153.89	1.80	5.45	57398.652311941.00	
272070.000	1560.00	.00	.00	116.10	292000.00	154.06	.00	154.32	1.86	5.44	53672.98214119.70	

10th ear flood Q gage

SUMMARY PRINTOUT TABLE 150

SECNO	Q	CWSEL	DITWSE	DITWSE	DITWSE	TOPWID	KLCH
212550.000	298400.00	127.24	.00	.00	-8.26	24283.63	.00
212550.000	298400.00	128.19	.95	.00	.95	13835.22	.00
215700.000	298400.00	128.82	.00	1.55	.00	24170.54	2750.00
215700.000	298400.00	129.72	.90	1.53	.90	14884.36	2750.00
216700.000	298400.00	131.75	.00	2.37	.00	24940.70	11000.00
216700.000	298400.00	132.44	.65	2.12	.65	14155.75	11000.00
234100.000	298400.00	133.89	.00	2.10	.00	25782.92	7400.00
234100.000	298400.00	134.64	.75	2.20	.75	16386.58	7400.00
235900.000	298400.00	135.19	.00	1.40	.00	23926.23	4800.00
235900.000	298400.00	136.22	.94	1.50	.94	15917.73	4800.00
239370.000	298400.00	137.17	.00	.00	.00	14941.56	470.00
239370.000	298400.00	138.30	.93	.08	.93	14613.38	470.00
240800.000	298400.00	138.41	.00	.00	.00	19141.40	450.00
240800.000	298400.00	138.39	.98	.09	.98	14050.12	450.00
241500.000	298400.00	138.82	.00	.41	.00	25377.47	1700.00
241500.000	298400.00	138.73	.91	.34	.91	12253.06	1700.00
241850.000	298400.00	138.84	.00	.09	.00	23162.56	350.00
241850.000	298400.00	138.82	.97	.09	.97	12418.97	350.00
242049.000	298400.00	138.11	.00	.22	.00	14595.66	179.00
242049.000	298400.00	137.08	.94	.26	.94	8615.55	179.00
242050.000	298400.00	138.13	.00	.00	.00	8170.99	1.00
242050.000	298400.00	137.88	.95	.00	.95	4798.54	1.00
242120.000	298400.00	138.75	.00	.02	.00	6277.70	70.00
242120.000	298400.00	137.18	.95	.02	.95	4799.33	70.00
242121.000	298400.00	138.15	.00	.00	.00	14082.56	1.00
242121.000	298400.00	137.17	.96	.07	.96	8615.98	1.00
242169.000	298400.00	138.19	.00	.03	.00	14595.24	49.00
242169.000	298400.00	137.15	.96	.03	.96	8616.06	49.00
242170.000	298400.00	138.18	.00	.01	.00	6272.43	1.00
242170.000	298400.00	137.14	.95	.01	.95	4799.43	1.00
242240.000	298400.00	138.20	.00	.02	.00	6174.10	70.00
242240.000	298400.00	137.16	.96	.02	.96	4808.18	70.00

GRAND	Q	QW586	DIFF586	DIFF584	DIFF585	DIFF587	X100H
242471.000	298400.00	135.18	.00	-1.02	.00	14599.62	1.00
242541.000	298400.00	137.14	.96	-1.02	.96	8621.06	1.00
242611.000	298400.00	138.38	.00	.12	.00	13240.95	197.00
242681.000	298400.00	137.24	.94	.10	.94	12009.64	199.00
242751.000	298400.00	136.67	.00	.37	.00	22803.76	568.00
242821.000	298400.00	137.48	.87	.24	.87	10892.32	569.00
242891.000	298400.00	136.23	.00	.68	.00	23011.16	1600.00
242961.000	298400.00	138.25	.96	.77	.96	71768.03	2800.00
243031.000	298400.00	137.35	.00	.06	.00	24057.54	700.00
243101.000	298400.00	138.28	.93	.03	.93	11158.09	200.00
243171.000	298400.00	136.27	.00	.11	.00	18351.27	100.00
243241.000	298400.00	138.47	.91	.09	.91	9816.45	100.00
243311.000	298400.00	137.47	.00	.06	.00	19910.99	300.00
243381.000	298400.00	138.36	.95	-1.01	.95	10533.17	300.00
243451.000	298400.00	136.43	.00	.04	.00	16235.37	100.00
243521.000	298400.00	138.43	.96	.07	.96	16645.95	200.00
243591.000	298400.00	137.70	.00	.25	.00	14484.74	1000.00
243661.000	298400.00	138.68	.98	.26	.98	11179.75	1000.00
243731.000	298400.00	136.03	.00	.38	.00	11837.99	1100.00
243801.000	298400.00	138.97	.88	.28	.88	4740.00	1100.00
243871.000	298400.00	138.63	.00	-1.05	.00	14769.35	290.00
243941.000	298400.00	138.92	.89	-1.05	.89	9571.98	290.00
244011.000	298400.00	138.20	.00	.17	.00	9332.43	1100.00
244081.000	298400.00	139.17	.91	.19	.91	7719.65	1100.00
244151.000	298400.00	139.24	.00	1.04	.00	9743.82	2630.00
244221.000	298400.00	140.21	.97	1.10	.97	4321.34	2630.00
244291.000	298400.00	139.65	.00	.81	.00	3493.28	1100.00
244361.000	298400.00	140.64	.84	.48	.84	619.10	1100.00
244431.000	298400.00	140.14	.00	.29	.00	3756.16	100.00
244501.000	298400.00	140.88	.74	.18	.74	619.72	100.00
244571.000	298400.00	141.15	.00	1.01	.00	3987.93	500.00
244641.000	298400.00	141.75	.58	.85	.58	627.53	500.00
244711.000	298400.00	142.67	.00	1.47	.00	4467.45	1000.00
244781.000	298400.00	143.21	.62	1.52	.62	625.64	1000.00

2000100 07104103

SRONO	Q	CWRSN	DIFWSP	DIFWSX	DIFWRS	YQPWID	XICH
257200.000	298400.00	144.82	.00	1.40	.00	4871.30	1100.00
257200.000	298400.00	144.63	.61	1.39	.61	632.34	1100.00
258200.000	298400.00	145.21	.00	.00	.00	2277.22	1200.00
258400.000	298400.00	145.15	.64	.52	.64	601.58	1200.00
259600.000	298400.00	145.92	.00	1.47	.00	7418.51	1200.00
259600.000	298400.00	145.54	.62	1.39	.62	612.41	1200.00
260200.000	298400.00	146.59	.00	.53	.00	2471.16	500.00
260400.000	298400.00	147.03	.59	.49	.59	605.32	500.00
260400.000	298400.00	148.75	.00	2.51	.00	2550.30	500.00
260400.000	298400.00	149.17	.42	2.14	.42	1082.18	300.00
260500.000	298400.00	149.72	.00	.00	.00	872.60	200.00
260500.000	298400.00	149.22	.51	.00	.51	845.00	100.00
260550.000	298400.00	149.73	.00	.42	.00	895.00	50.00
260550.000	298400.00	149.62	.19	.40	.19	895.00	50.00
260600.000	298400.00	149.10	.00	.02	.00	895.00	50.00
260600.000	298400.00	149.64	.49	.02	.49	895.00	50.00
260700.000	298400.00	149.80	.00	.65	.00	1418.97	100.00
260700.000	298400.00	150.17	.36	.53	.36	1220.00	100.00
260730.000	298400.00	150.81	.00	.01	.00	1519.64	50.00
260730.000	298400.00	150.38	.46	.01	.46	1720.00	50.00
260800.000	298400.00	150.03	.00	.22	.00	1422.65	70.00
260800.000	298400.00	150.42	.39	.25	.39	1220.00	70.00
261200.000	298400.00	150.10	.00	.07	.00	1681.25	400.00
261200.000	298400.00	150.49	.39	.07	.39	1315.00	400.00
262400.000	298400.00	150.48	.00	.29	.00	1785.93	1700.00
262400.000	298400.00	150.82	.42	.33	.42	1388.26	1700.00
264000.000	298400.00	151.07	.00	.57	.00	2005.24	1600.00
264400.000	298400.00	151.41	.44	.49	.44	1470.00	1600.00
264600.000	298400.00	151.34	.00	.03	.00	1470.00	100.00
264600.000	298400.00	151.43	.19	.02	.19	1470.00	100.00
264700.000	298400.00	151.03	.00	.09	.00	1470.00	150.00
264750.000	298400.00	151.52	.49	.09	.49	1470.00	150.00
265100.000	298400.00	151.04	.00	.06	.00	1928.79	450.00
265200.000	298400.00	151.35	.36	-.17	.26	1887.95	450.00

1000100 07104103

SRONO	Q	QWSEI	DIFWSP	DIFWSX	DIFWSS	TOPWTD	WGRH
266750.000	292000.00	151.70	.00	.11	.00	3700.41	1550.00
266750.000	292000.00	151.72	.52	.37	.52	1181.61	1550.00
266750.000	292000.00	151.14	.00	-1.00	.00	1697.35	150.00
266750.000	292000.00	151.62	.48	-1.10	.48	870.00	150.00
266750.000	292000.00	152.74	.00	1.00	.00	1950.87	500.00
266750.000	292000.00	152.71	.52	1.09	.52	1409.80	500.00
266750.000	292000.00	152.30	.00	-1.29	.00	1050.00	150.00
266750.000	292000.00	152.45	.55	.77	.55	1050.00	150.00
266750.000	292000.00	151.90	.00	.00	.00	1437.00	100.00
266750.000	292000.00	152.45	.55	.00	.55	1437.00	100.00
266750.000	292000.00	152.64	.50	.74	.50	1775.37	1070.00
266750.000	292000.00	153.15	.51	.70	.51	1644.20	1070.00
266750.000	292000.00	152.70	.00	.00	.00	1965.77	330.00
266750.000	292000.00	153.18	.48	.04	.48	1513.85	330.00
266750.000	292000.00	152.72	.00	.02	.00	1966.85	50.00
266750.000	292000.00	153.70	.49	.02	.49	1513.86	50.00
270450.000	292000.00	153.11	.00	.44	.00	2358.91	1150.00
270450.000	292000.00	153.69	.59	.49	.59	2294.40	1150.00
272610.000	292000.00	153.53	.00	.83	.00	2695.65	1550.00
272610.000	292000.00	154.05	.52	.37	.52	2292.08	1550.00

SUMMARY OF ERRORS AND SPECIAL NOTES

WARNING SECHN= 146800.000	PROFILE= 2	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECHN= 150400.000	PROFILE= 1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECHN= 150400.000	PROFILE= 2	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECHN= 157400.000	PROFILE= 1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECHN= 157400.000	PROFILE= 2	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECHN= 157750.000	PROFILE= 1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECHN= 157750.000	PROFILE= 2	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECHN= 157850.000	PROFILE= 1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECHN= 157850.000	PROFILE= 1	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECHN= 159250.000	PROFILE= 2	CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

10OCT06

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 ROADWAY DATA 100-YEAR 11000 0 GALT
 PROFILE NO. 2

STATION	WIDTH	ROADWAY SECTION AREA	MEAN VELOCITY	RAILS SURFACE ELEVATION		DIFFERENCE
				WITH ROADWAY	WITHOUT ROADWAY	
112950.000	13835.	140809.	2.1	128.1	127.2	.9
113000.000	14085.	140818.	1.8	128.7	128.3	.4
113050.000	14306.	140857.	1.2	134.4	132.8	1.6
113100.000	14706.	140877.	2.0	144.6	143.9	.7
113150.000	15065.	1408703.	1.5	136.2	135.3	.9
113200.000	15494.	1408118.	1.6	135.3	135.4	-.1
113250.000	15740.	1408388.	1.7	136.4	135.4	1.0
113300.000	16163.	1408680.	2.0	136.7	135.8	.9
113350.000	16578.	1408340.	1.9	136.8	135.9	.9
113400.000	17011.	1408311.	2.3	137.0	136.1	.9
113450.000	17427.	1408680.	4.0	137.1	136.1	1.0
113500.000	17847.	140874.	4.0	137.2	136.2	1.0
113550.000	18261.	1408336.	2.5	137.2	136.2	1.0
113600.000	18671.	1408201.	2.5	137.2	136.2	1.0
113650.000	19084.	1408449.	4.0	137.2	136.2	1.0
113700.000	19497.	1408884.	4.0	137.2	136.2	1.0
113750.000	19900.	1408230.	2.5	137.2	136.2	1.0
113800.000	20306.	1408316.	1.9	137.2	136.3	.9
113850.000	20714.	1408684.	2.4	137.5	136.6	.9
113900.000	21126.	1408788.	1.9	138.3	137.3	1.0
113950.000	21533.	1408211.	1.9	138.3	137.4	.9
114000.000	21940.	1408051.	2.3	138.4	137.5	.9
114050.000	22348.	1408426.	2.5	138.4	137.4	1.0
114100.000	22758.	1408540.	2.5	138.5	137.5	1.0
114150.000	23168.	1408883.	2.2	138.7	137.7	1.0
114200.000	23577.	1408053.	1.7	138.8	138.1	.7
114250.000	23984.	1408937.	2.7	138.9	138.0	.9
114300.000	24396.	1408888.	1.8	139.1	138.2	.9
114350.000	24802.	1408444.	6.9	140.2	139.2	1.0
114400.000	25209.	1408540.	14.5	140.6	139.6	.9
114450.000	25616.	1408553.	14.4	140.8	140.1	.7
114500.000	26022.	1408445.	14.7	141.7	141.3	.4
114550.000	26426.	1408118.	13.5	141.2	142.6	1.4
114600.000	26829.	1408054.	12.5	141.6	143.0	1.4
114650.000	27232.	1408590.	13.8	143.1	144.5	1.4
114700.000	27634.	1408713.	13.7	143.5	145.9	2.4
114750.000	28035.	1408779.	13.1	147.0	146.1	.9
114800.000	28437.	1408051.	8.1	149.2	148.6	.6
114850.000	28838.	1408267.	9.7	149.2	148.7	.5
114900.000	29239.	1408443.	9.1	149.6	149.1	.5
114950.000	29639.	1408556.	9.1	149.6	149.1	.5
115000.000	30040.	1408552.	7.3	150.2	149.8	.4

FLOODING DATA: 100-year 11000 Q 9400
 PROFILE NO. 2

STATION	WIDTH	SECTION AREA	MEAN VELOCITY	WATER SURFACE ELEVATION		
				WITH FLOODWAY	WITHOUT FLOODWAY	DIFFERENCE
260700.000	1220.	40661.	7.3	150.2	149.8	.4
260800.000	1220.	40963.	7.3	150.4	150.0	.4
261000.000	1315.	43503.	6.9	150.5	150.1	.4
261200.000	1308.	42981.	7.1	150.8	150.4	.4
261400.000	1470.	43679.	6.8	151.4	151.0	.4
261600.000	1470.	44709.	6.8	151.4	150.9	.5
261750.000	1470.	43838.	6.8	151.5	151.0	.5
262000.000	1038.	35713.	8.4	152.4	152.1	.3
262250.000	1165.	45155.	8.4	151.7	151.7	.0
262400.000	810.	30967.	9.4	151.6	151.1	.5
262400.000	1410.	53775.	5.4	152.7	152.2	.5
262500.000	1030.	34765.	8.4	152.5	152.5	.0
262550.000	1447.	48887.	6.0	152.5	151.9	.6
262700.000	1647.	48526.	6.0	153.1	152.6	.5
2629250.000	1618.	45329.	6.4	153.2	152.7	.5
263000.000	1050.	45353.	6.4	153.2	152.7	.5
263400.000	2244.	61374.	5.7	153.7	153.1	.6
263610.000	2244.	61673.	5.4	154.0	153.5	.5